

*ce*  
*Sci*

# Indian Journal of Pure & Applied Physics

Volume 12, 1974

## INDEX

Subject Grouping ...	859
Author Index ...	867
Keyword Index ...	875

*U. I. C. C.*  
FEB 2 1977  
*LIBRARY*



COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH  
NEW DELHI



## Subject Grouping

### Solid State Physics

(Including studies on semiconductors, thin films, crystal growth, lattice dynamics electrets, phonons, etc.)

Microplasma switching & negative resistance in the Avalanche breakdown region of silicon <i>p-n</i> junctions	1	Experimental study of background brightness in image tubes	99
M. S. Tyagi		L. M. Rangarajan, V. R. Katti & G. K. Bhide	
Fabrication of gold- <i>n</i> -type gallium arsenide Schottky barrier varactor diodes	7	X-ray studies of lattice defects in chemically deposited thin films of silver	156
Om Prakash		A. K. Chaudhuri & N. K. Misra	
A theory of the variation of mean gap length with charge in nuclear emulsions	13	A dielectric mask for GaAs devices	160
A. P. Sharma & G. P. Sharma		Om Prakash	
Structural & optical properties of indium arsenide films	17	High temperature thermal expansion of Pt-40% Rh alloy	162
A. Goswami, B. V. Rao & Prabhat Singh		A. C. Momin	
Optical properties of cuprous sulphide films	21	Breakdown of thin polythene films by surface discharges	163
A. Goswami & B. V. Rao		B. Shivkumar & R. S. Nema	
Dielectric & structural properties of vacuum deposited niobium oxide films	26	Dosimetric study of changes due to X-ray doses in the dielectric conductance of thin film capacitors	165
Amit P. Goswami & A. Goswami		Pratap Singh & R. S. Rai	
Voltage & frequency dependence of electroluminescent brightness of Zns : Cu, Sn phosphor	32	Low frequency noise in space charge limited solid state diode neglecting diffusion	167
R. C. Maheshwari & M. H. Khan		Y. K. Sharma & B. B. Srivastava	
On carrier concentration & Fermi level in impure semiconductors	70	A simple model pseudopotential for metals—Application to aluminium	171
M. L. Mukherjee & C. L. Roy		Madhu Jain & S. C. Jain	
Phase transitions of sodium nitrite-sodium nitrate mixed crystals	71	Phonons in amorphous solids & their application to liquid metals	175
H. B. Satyamurthy, S. Srinivasan & V. Sivaramakrishnan		N. S. Saxena & R. C. Bhandari	
Glow curves of thermally pretreated NaCl:Sr crystals	79	Threshold energy for impact in GaAs	179
R. V. Joshi & N. L. Kekan		Chandra Shekhar & S. K. Sharma	
Fractional ionic character & effective ionic charges in alkali & silver halide crystals	81	Lattice dynamical study of the recoilless fraction of iron-57 in nickel, molybdenum, tungsten, $\alpha$ -iron & copper	182
Jai Shanker, S. C. Goyal & L. D. Agarwal		(Kum.) Sneh	
Effect of crystal potential on the electronic polarizabilities & radii of ions in alkali halide crystals	85	Thermally stimulated current curves in Zns : Cu : Co photoconductor	185
L. D. Agarwal & Jai Shanker		S. Singh	
Debye-Waller factors of $\alpha$ -iron, nickel, molybdenum & tungsten by lattice dynamical models	89	Cathodoluminescence & decay studies of CaS : As phosphor	188
(Kum.) Sneh		P.K. Ghosh & K.L. Jain	
Growth of CaWO <sub>4</sub> -Nd <sup>3+</sup> single crystals by Czochralski technique	92	Amplification of ultrasonic waves in piezoelectric semiconductor on the interaction with an electron beam	233
R. C. Narula, R. Thyagarajan, Man Mohan & T. R. Parashar		Ramchandra & J. S. Verma	
Spectral response of the magnetically polarized naphthalene	95	Amplification of ultrasonic waves in piezoelectric semiconductor through interaction with deformation potential	235
B. M. Agrawal & C. S. Bhatnagar		Ramchandra & J. S. Verma	
		Dependence of young's modulus on zinc content in $\alpha$ -phase copper & silver brasses	245
		M. L. Bhatnagar	
		Specular reflection & phonon conductivity of semiconductor LiF	247
		K. S. Dubey	
		Augmentation of electrical conductivity of soda glass due to impact of Ar <sup>+</sup> ions	250
		V. T. Chiplonkar & S. V. Gogawale	

Field & temperature effect on charge Distribution on faces of cubical magneto-electrets of perspex ...	254	Magnon contribution to specific heat of some anti-ferromagnetic perovskites ...	420
Ajit N. Deshpande & C. S. Bhatnagar		N. A. Begum & J. A. Reissland	
Ultrasonic attenuation in intermediate state of tin ...	258	Luminescence characteristics of $Mn^{2+}$ in $LaCl_3$ ...	458
S. K. Mahajan & K. D. Chaudhuri		J. C. Joshi, B. C. Bhatt &	
Role of oxygen & $La^{2+}$ ions on the infrared spectra & growth patterns of the photo-current in $ZnO$ photoconductor ...	314	Rajesh Kumar	
S. Singh		Dielectric investigation of plasma in some semiconductors ...	465
Absorption & emission spectra of $CdI_2 : Mn$ phosphor ...	315	B. K. Farkya, T. K. Bandopadhyaya & S. M. Das Gupta	
J. C. Joshi & Rajesh Kumar		Phonon conductivity of $Mg_2Ge$ , $Mg_2Si$ & $Mg_2Sn$ ...	468
Radiation-controlled electroluminescence under concurrent action of electric field & ultraviolet radiation ...	317	K. S. Dubey	
S. G. Prakash & Hari Mohan		Transport processes in a thermocouple ...	477
X-ray dosimetric study of Bharat Electronics (BEL) solid state devices ...	321	K. M. Jha & M. L. Thakur	
Pratap Singh & A. S. Chauhan		Dielectric behaviour of some ferroelectric powders ...	483
Higher order correction to low-temperature thermal conductivity of $n$ -Ge ...	323	Abhai Mansingh & S. S. Bawa	
Anil Kumar		Growth of ammonium bromide crystals from the vapour phase ...	519
Effect of intense magnetic field on the recombination process in semiconductor devices: Part I— theoretical analysis ...	329	Krishna Kumar	
Rama Swami, (Kum.) Ganga Chakraborty & B. A. P. Tantry		Electrolytic etching of dislocations in Bi-Sb crystals ...	522
Effect of intense magnetic field on the recombination process in semiconductor devices: Part II—experimental study ...	334	V. P. Bhatt, G. R. Pandya & A. R. Vyas	
Rama Swami, (Kum.) Ganga Chakraborty & B. A. P. Tantry		Pseudo-dipolar anisotropy in cubic FeGe ...	535
Lattice dynamical study of gold & silver by means of modified deLaunay model: Part I ...	339	S. P. Bhattacherjee	
(Kum.) Asha Goel & (Kum.) Sneh		Electrical conductivity of calcium tungstate single crystals ...	539
Ultrasonic absorption in the normal & superconducting states of tin & indium ...	343	H. B. Lal, Naseebdar & Ashok Kumar	
S. K. Mahajan A. K. Mukerjee & K. D. Chaudhuri		Estimation of activation energy of vacancy formation by quenching experiments ...	544
A lang X-ray topography camera & some X-ray topographic investigations of whisker crystals ...	350	T. V. Rajan	
Ajit Ram Verma, Krishan Lal, D. R. Pahwa, Vijay Kumar & Keshav Aggarwal		Determination of exchange parameters in some fcc type-2 Heisenberg antiferromagnets: HTS expansion method ...	589
Growing optical grade lithium fluoride single crystals using a Bridgman-type vacuum furnace ...	358	R. Shanker & R. A. Singh	
S. M. D. Rao & G. K. Bhide		Decay & thermoluminescence of $CaS : Sb$ phosphors ...	596
Electrical conductivity of evaporated tellurium films ...	399	J. S. Jarori & S. K. Varma	
A. K. Chaudhuri		Effect of flux on decay & thermoluminescence of $CaS : Zr$ phosphors ...	603
Variation in magnetic susceptibility of magnetically polarized naphthalene ...	404	A. K. Chakravarti, S. L. Mor & J. D. Ranade	
B. M. Agrawal & C. S. Bhatnagar		Effect of flux on emission characteristics of $CaS : Zr$ phosphors ...	608
The nature of spin arrangement in cubic FeGe	408	A. K. Chakravarti, S. L. Mor & J. D. Ranade	
S. P. Bhattacherjee		Activation of zinc sulphide phosphors by metallic impurities ...	612
Stress-induced ferromagnetic phase in ferrous alloys ...	412	O. P. Nangia	
P. K. Ghosh, R. C. Bhattacharya & G. Datta		Estimation of effective thermal conductivity of porous media by means of a nomogram	663
		P. B. Lal Chaurasia, D. R. Chaudhary & R. C. Bhandari	
		X-ray study of changes of the structure of artinite on heat treatment ...	667
		K. N. Goswami	
		Evaluation of high quality phosphor screens for image tubes ...	670
		B. P. Varma & C. Ghosh	

## INDEX

Effect of spatial variation of dielectric function & of effective mass on ground states of shallow donors in Si & Ge	675	Reactivity of some dislocation etchants on the cleavage plane of Bi, Sb & Bi-Sb alloy single crystals	807
K. Navaneethakrishnan & S. Balasubramanian		V. P. Bhatt, A. R. Vyas & G. R. Pandya	
Effect of mobility gradiation on excess carrier distribution & cut off frequency of a diffused base transistor at different injection levels	680	Local elastic constants in dilute Mo-Re Alloy	811
T. Sinha, N. K. D. Choudhury, A. K. Biswas & A. N. Daw		Krishna Murari Kesharwani	
Counter for thermally stimulated exo-electron studies	685	Oxide growth on bismuth films & aging effect on current density through the sandwiched bismuth oxide layers	815
K. B. Murthy, C. M. Sunta & V. K. Jain		A. Rahman & P. C. Mahanta	
Binding energy measurements in Al-Co system	689	Nature of transformations at (111) (111) incoherent crystal boundary in silicon crystals	847
M. S. Anand, B. M. Pande & R. P. Agarwala		W. N. Borle	
Effect of point imperfections on lattice thermal conductivity of an insulator at high temperatures	720	Thermally stimulated currents in carnauba wax magneto-electrets	849
K. S. Dubey		A. P. Rojindar, M. L. Khare & C. S. Bhatnagar	
Dielectric behaviour of polystyrene theromoelectrets	729	<b>Chemical Physics</b>	
S. P. Sharma & C. S. Bhatnagar		( <i>Including studies on orbital theory, molecular physics, thermodynamics, properties of liquids and gases, etc.</i> )	
Voltage & frequency dependence of spectral distribution & electroluminescent brightness of (Zn, Cd, Hg) S : Cu, Ga, In luminophor	732	Self-consistent approximation for the radial distribution functions of liquid argon	47
R. C. Maheswari & M. H. Khan		R. V. Gopala Rao, T. Nammalvar & K. Narasimha Swami	
Polarization of BaTiO <sub>3</sub> & KNbO <sub>3</sub> single crystals with variation of applied ac electric field	736	Franck-Condon factors & r-centroids for the H <sup>3</sup> φ <sub>u</sub> -G <sup>8</sup> Δσ (Gaydon-Herman) Green band system of N <sub>2</sub>	77
V. G. Kher, B. A. Palki, K. R. Bagree & D. A. Deshpande		K. A. Mohamed & B. N. Khanna	
Growth of YIG single crystals by flux-melt technique	740	Various mean-square amplitude quantities in carbonyl cyanide	78
R. Thyagarajan, R. C. Narula, Man Mohan & T. R. Parashar		V. Unnikrishnan Nayar, G. Aruldas & S. J. Cyvin	
Structural properties of some mixed oxidic spinels	745	On the formation of double molecules in dipolar & quadrupolar gases	103
A. Bhaduri, H. V. Keer & A. B. Biswas		Evelyn Guha, S. Datta, K. K. Datta & A. K. Barua	
Rao-Keer constant of alkali halide crystals	779	Frequency-dependent friction constant & its implication to single-particle properties of liquid metals : Na & Pb	109
K. P. Thakur & J. D. Pandey		B. Jhamb, S. C. Jain & R. C. Bhandari	
Radiation-induced luminescence in benzene & cyclohexane matrices at low temperatures	783	Kinetic & potential constants of tetrahedral thio & seleno anions	155
S. B. Srivastava, S. Bhadra & A. Mozumder		Nitish K. Sanyal, Parvez Ahmad & L. Dixit	
Effect of debye temperature θ <sub>D</sub> on lattice thermal conductivity	788	Entropy of formation of Schottky defects in CsCl-type crystals	168
K. S. Dubey		V. K. Agrawal & H. C. Garg	
Spectral energy distribution & voltage-frequency dependence of Cu-activated ZnS phosphors	793	Excess entropy of mixing liquids	202
V. S. Kulkarni & D. S. Ambardekar		K. Narasimha Swamy	
Effect of field strength & frequency on (Zn, Cd) S : Cu, Mn phosphors	800	Molecular constants of some XY <sub>4</sub> square planar type molecules & ions	206
V. S. Kulkarni & D. S. Ambardekar		P. Thirugnanasambandam & S. Mohan	
Electronic polarizabilities & sizes of ions in alkaline earth halide crystals with the fluorite structure	803	Triangular matrices in the theory of molecular vibrations	210
J. K. Jain & Jai Shanker		K. Babu Joseph & C. P. Girijavallabhan	

Franck-Condon factors & <i>r</i> -centroids for the $b^1\Sigma^+ - X^3\Sigma$ band system of NF ...	243	Franck-Condon factors & <i>r</i> -centroids for $A^1\Pi - X^1\Sigma^+$ system of GeO molecule ...	528
K. A. Mohamed, B. N. Khanna & K. M. Lal		Janardan Singh	
Franck-Condon factors & <i>r</i> -centroids for the bands of $A^2\Pi - X^2\Sigma$ system of magnesium hydride ... ... ...	244	Symmetry coordinates for the tetrahedral $X(YZ_3)_4$ model ... ... ...	546
G. K. Patel		S. J. Cyvin	
Validity of modified Rao's rule in liquids of oxygen & nitrogen ... ...	276	Spectroscopic studies in mean amplitudes of vibration of pentafluorides of arsenic, phosphorus & vanadium .. ..	550
A. N. Patnaik & K. Samal		Nitish K. Sanyal & L. Dixit	
Optically active lattice vibrations—Rutile structures ... ...	307	Compliance constants for some metal-carbon & metal-oxygen bonds .. ..	554
S. Sreenivasan & G. Aruldas		S. V. Kasmir Raja, S. J. Pandian & G. A. Savari Raj	
A simple method for exact solution of $2 \times 2$ secular equation in molecular vibrations	309	Complex compressibility of a liquid ...	557
G. Thyagarajan & M. K. Subhedar		A. V. Narasimham	
Hard-sphere memory function for liquid metals ... ... ...	362	Photo-sensitivity of dialkyl aniline solutions in carbon tetrachloride ... ...	596
B. Jhamb, S. C. Jain & R. C. Bhandari		Iqbal Krishan	
Vibrational & rotational properties of <i>ab initio</i> potential curve of ${}^6\text{Li}{}^{19}\text{F}$ ...	367	Influence of atomic mass on the Coriolis coupling constants in some $\text{XY}_4$ -type molecules ...	598
V. B. Gohel		K. Elumalai & M. Radhakrishnan	
Triplet correlations in liquid neon along 35°05 K isotherm ... ...	386	On the molecular vibration analysis of $\text{PS}_4^{2-}$ ion ... ... ...	601
B. Jhamb, S. C. Jain & R. C. Bhandari		Nitish K. Sanyal, Parvez Ahmad & L. Dixit	
Atomization energies of diatomic heavier crystals & electron affinities of halides & chalcogenides ... ...	387	Parametric study of potential energy distribution ...	658
S. P. Sinha & K. P. Thakur		K. M. Padmaja & G. Aruldas	
Mean amplitudes of vibration of some trihalide ions ... ...	393	Extended Hückel calculation of molecular parameters of calcium halide ...	704
Nitish K. Sanyal, D. N. Verma & L. Dixit		D. P. Nanda & B. S. Mohanty	
Calculation of polarographic half-wave reduction & oxidation potentials of alternant hydrocarbons ... ...	434	Evaluation of third virial coefficients using the Morse potential function for argon, krypton & xenon ... ...	707
A. K. Srivastava, S. C. Sharma, B. Krishna & S. P. Gupta		R. E. Caligaris & J. C. Grangel	
Evaluation of kinetic constants & vibrational mean amplitudes of $\text{CX}_2^{2-}$ systems ...	437	Optimized double configuration wavefunctions of lowest ${}^1D$ state of four-electron atomic system ... ... ...	713
Nitish K. Sanyal, L. Dixit, Parvez Ahmad & C. P. Pandey		R. S. Banerjee, D. C. Mukherjee & N. G. Mukherjee	
Force constants & vibrational amplitudes of some octahedral hexahalo anions ...	455	Studies of ground state wavefunction of $\text{Cu}^{2+}$ ion in $\text{K}_2\text{CO}(\text{SO}_4)_2 \cdot 6\text{H}_2\text{O}$ ...	748
D. K. Sharma, A. N. Pandey & R. K. Goel		B. A. Sastry & C. S. Sastry	
Influence of atomic mass on the Coriolis coupling constants in some $\text{XY}_4$ -type molecules : $\text{XCl}_4$ molecules ...	462	Explanation of temperature variation of physical properties of metals & insulators on the basis of temperature dependence of mean free-path of electrons & phonons ...	751
K. Elumalai & M. Radhakrishnan		K. M. Jha & M. L. Thakur	
Intramolecular force fields & vibrational mean amplitudes of some octahedral systems of $\text{Mo}_9^{n-}$ -type ions ...	489	The phenomenon of solid-liquid translation... R. Sengupta, A. Guha & Paritosh Basu	823
Parvez Ahmad, L. Dixit & Nitish K. Sanyal		On the generalization of Einstein's fluctuation probability ... ...	827
Mean amplitudes of vibration of some lanthanide trifluorides ... ...	495	C. G. Chakrabarti	
Nitish K. Sanyal & L. Dixit		Pseudo-Grüneisen parameter of pure liquids & liquid metal alloys ...	830
Force constants of borazine & borazine- $d_6$ ...	498	R. P. Jain & J. D. Pandey	
M. K. Subhedar & G. Thyagarajan		On the correlation between electronic polarizabilities & radii of ions ...	855
		Jai Shanker & L. D. Agarwal	

**Nuclear Physics**

(Including characteristics of elementary particles, radioactivity studies, nuclear models, etc.)

A study of the $X^{\circ}$ meson Decaying into $\pi\pi\eta$	49
P. N. Upadhyay	
Nuclear capture at rest of $\Xi$ hyperons	51
S. P. Goel & Y. Prakash	
16.7-MeV state of ${}^5\text{He}$ in the cluster model	117
Vinaya K. Jain & B. B. Srivastava	
Hyperfragments & double $\Delta$ -hyperfragments produced from $\Xi^-$ captures	213
S. P. Goel & Y. Prakash	
Current algebra & radiative $K^*$ decay	232
C. Watal & B. K. Agarwal	
Beam current losses in race track microtron...	237
V. B. Asgekar, R. K. Bhalla, M. R. Bhiday & V. N. Bhoraskar	
Nuclear cascade & range of spallation hyperfragments	286
S. P. Goel, Tryug Singh & Y. Prakash	
Decay scheme of ${}^{104}\text{Rh}$	391
R. K. Grgis, J. Al-Husseini, O. El-Rawi & A. A. Abdulla	
Model independence of the relationship between intrinsic quadrupole moments & translation moments of inertia of even-even nuclei	377
A. N. Mantri & P. C. Sood	
Mass spectrometric determination of tritium in neutron-irradiated lithium fluoride	389
S. B. Kaushik, S. R. Gupta, S. N. Chatterjee & K. K. Laroia	
On the Decay of ${}^{106}\text{Rh}$	391
I. V. S. Rathore, R. R. Sharma & B. P. Singh	
Energy spectra of pions & $\Sigma$ -hyperons produced from $K^-$ capture..	570
S. P. Goel & Y. Prakash	
On the two-neutron absorption of $K^-$ mesons	575
S. P. Goel & Y. Prakash	
An assessment of the compound nucleus-mechanism for 14 MeV neutron-induced reactions in rare-earth region of nuclei	640
P. Rama Prasad, J. Rama Rao & E. Kondaiah	
Comparison of various level density formulae	645
B. S. Wadhwa, K. K. Manocha & R. K. Mohindra	
Characteristics of phosphate glasses developed as a dielectric solid state particle tractor detector	834
N. Bhandari & S. Kumar	
Test for scaling in multiplicity distribution in high energy $\pi^-p$ collisions	839
R. C. Oli & S. K. Tuli	
Fission track ages of some biotites of Bihar mica belt	850
H. S. Virk & S. L. Kaul	

**Astrophysics**

(Including cosmological studies, relativity theory, etc.)

Gravitonic mass & cosmological constant	167
K. D. Krori & Jayantimala Barua	
Massive spheres with constant-density cores two variable density outer shells in general relativity	423
K. D. Krori & P. Borgohain	
On the interior metric of a charged-dust cylinder in general relativity	430
K. D. Krori & Jayantimala Barua	
Modified Hoyle-Fowler model for quasars	457
M. C. Durgapal	
A simple model of the galaxy with an algebraic density law	614
Gopa Saha & Kalpana Bandyopadhyay	
Massive spheres with two constant-density inner layers & a variable density outer layer in general relativity	616
K. D. Krori & P. Borgohain	
Magnetic energy & cylindrically symmetric distribution of matter in equilibrium in general relativity	818
K. D. Krori & Jayantimala Barua	
Massive spheres with three variable-density distributions in general relativity	854
K. D. Krori & P. Borgohain	

**Mathematical Physics**

(Including applications of relativity theory, field equations, quantum physical studies, etc.)

On non-steady electric fields	114
N. D. Sen Gupta	
Drift velocities & energy distribution of large molecules in the upper atmosphere	440
S. B. Malvadkar, M. J. Bell & M. D. Kostin	
Chiral symmetry breaking & the K-N $\sigma$ term	846
C. V. Sastry & T. N. Tiwari	

**Electronics**

(Including solid state devices, circuit analysis, etc.)

Current-voltage characteristics of bismuth-bismuth oxide-indium sandwich structures at room temperature	238
A. Rahman & P. C. Mahanta	
A negative resistance oscillator using a bistable circuit	220
P. E. Sankaranarayanan	
A multiloop multifilter phase-locked demodulator	224
B. N. Biswas & P. Banerjee	
Linearization of thermocouples	303
Ashish Kumar Banerjee	

An electronic impedance transformer for use with a selenium photovoltaic cell ... B. L. Sharma	452	NMR study of bis (thiourea) cobalt (II) complexes ... H. Singh, D. K. Tyagi, R. J. Singh & Naseer Ahmad	382
Determination of characteristic self capacitance & self inductance of a discharge oscillator ... K. S. Rajput & R. K. Shrivastava	463	EPR & optical absorption studies on certain copper complexes ... P. V. Gopalakrishna Murthy, C. R. Narasimha Sarma & C. Haranadh	394
Design of a Colpitts push-pull pulsed oscillator for ultrasonic pulse echo technique ... A. K. Mukerjee, S. K. Mahajan & K. D. Chaudhuri	514	NMR study of solid hippuric acid ... (Miss) Purnima Tandon, A. K. Banerjee & R. C. Gupta	533
Low frequency noise in the perfect insulated diode with shallow traps under the critical condition ... Y. K. Sharma	524	ESR study of penta coordinated NNN' N'' N''' N''' -hexamethyl-3, 6-diazaoctane-1,8 diamine copper sulphate, H <sub>2</sub> O ... S. G. Sathyaranayanan, V. G. Krishnan & G. Sivarama Sastry	591
Power law transfer characteristic of junction field effect transistors in magnetic field ... R. N. Singh & H. C. Prasad	594	ESR studies on thiocyanato triethylene tetraamine copper (II) thiocyanate ... B. Anjaneya Sastry & G. Sivarama Sastry	632
Stability investigations of super-alpha composite transistor amplifier ... S. K. Mukherjee	724	Zeeman effect of NQR lines in methyl- <i>p</i> -iodobenzoate & methyl- <i>m</i> -iodobenzoate ... M. Rangacharyulu & D. Premaswarup	636
Gain stability of the difference amplifier ... R. S. Sharma & A. K. Hanjura	772	Wide line proton resonance study of imidazole ... (Miss) Parveen Mirza, P. Agarwal & R. C. Gupta	716
Secondary electron emission of amorphous alumina films ... R. L. Verma	782	Application of broad line NMR technique to the study of amino group rotation in organic solids ... A. K. Banerjee, (Miss) P. Mirza, P. Agarwal & R. C. Gupta	768
Study of the stability characteristics of compound connections ... K. K. S. Jamwal & R. S. Sharma	856	PMR studies on intramolecular rotation in solid <i>p</i> -aminophenol ... R. C. Gupta, A. K. Banerjee & P. Agarwal	790
<b>Masers, Lasers &amp; Holography</b>			
Edge structure patterns in LiIO <sub>4</sub> , using ruby laser ... S. C. Gupta	57	<b>Plasma Physics, &amp; Electrical Discharge Characteristics</b>	
Effect of rotational relaxation on the sequentially Q-switched carbon-dioxide laser transitions ... B. S. Patel	129	Nonlinear second harmonic generation in bounded cold beam-hot plasma systems B. N. Basu	35
Interaction of a sequence of laser pulses with a two-level system & explanation of photon echo ... H. G. Venkatesh & G. Guha Sarkar	502	Characteristics of discharge pulses in low pressure power frequency discharges ... R. S. Nema & R. K. Shrivastava	39
Lensless fourier transform holographic multiplexing : Part I—carrier multiplexing ... P. C. Mehta & (Miss) Sarita Swami	592	Electrode glows in aqueous solutions ... J. P. Damle & R. G. Edkie	43
Solutions for two-level interaction problem with loss mechanism ... A. K. Mishra & N. R. Roy	622	Influence of time on emission of pulses in air at a moderate pressure under dc excitation ... S. G. Pimpale	72
Multiple-photon excitations in molecular crystals by giant pulse ruby laser ... B. Kumar, Ved Parkash & T. S. Jaseja	626	Rectification in electrical discharges ... R. S. Nema	75
<b>Resonance Phenomena</b>			
(NMR, NQR, ESR, etc.)			
Calculation of electric field gradient tensor & NQR frequencies ... K. S. Ramasastri & D. Premaswarup	69	Excitation of electromagnetic waves by electric ring source in magnetized cylindrical solid state plasma circuit ... Ramachandra & J. S. Verma	192
NQR spectra of <sup>79</sup> Br & <sup>81</sup> Br ... K. S. Ramasastri & D. Premaswarup	281	Determination of electron temperature in a Lorentz plasma by sonic probe ... A. P. Saxena & R. K. Saxena	198
Theory of an inhomogeneous solid state plasma waveguide in a longitudinal magnetic field ... Ramesh Chandra Soni & P. V. Bakore			
320			

## INDEX

<b>Studies on propagation of transverse &amp; longitudinal waves in a plasma</b>	561	<b>Spectroscopy</b>
R. C. Soni & P. V. Bakore		( <i>Including optical, X-ray &amp; Mössbauer spectroscopy</i> )
<b>Studies on hysteresis &amp; anti-hysteresis in induced (electrodeless) discharges under perfect dark illumination</b>	565	X-ray spectroscopic study of some copper manganites
S. G. Pimpale		... ... ... 60
<b>Radiation from an electric ring source in plasma environment</b>	657	D. K. Kulkarni & Chintamani Mande
Ram Chandra & J. S. Verma		
<b>Radiation from a line source of magnetic current in cylindrical semiconductor plasma column</b>	757	Electronic absorption spectra of 3, 5- & 2,6-dichloropyridines
Ram Chandra & J. S. Verma		... ... ... 64
<b>Breakdown potential of air column with crossed rf &amp; dc electric fields</b>	760	R. S. Tripathi & B. R. Pandey
B. Bhattacharjee & S. P. Das		
<b>Plasma waves in a periodic structure carrying current</b>	764	Absorption spectra of naphthalene, anthracene & phenanthrene cations in boric acid glass in the region 600-1400 nm
S. R. Sharma & T. N. Bhatnagar		... ... ... 66
<b>Collisional damping of electromagnetic waves in plasma</b>	786	Z. H. Khan, B. N. Khanna & Z. H. Zaidi
Sawinder Singh, S. C. Gupta & J. M. Midha		
<b>Optics</b>		
<b>Diffraction images of coherently illuminated objects in the presence of spatial frequency amplitude filters</b>	133	K Absorption edge of germanium in some dichalcogenides
S. D. Gupta		... ... ... 74
<b>Diffraction images of truncated periodic objects formed by a diffraction-limited imaging system with an annular aperture</b>	138	V. B. Sapre & Chintamani Mande
A. K. Kavathekar, G. S. Bhatnagar & K. Singh		Vibrational spectra & normal vibrations of propionamides
<b>A general expression for incoherent transfer function of slit apertures with uni-dimensional apodization filters</b>	395	P. Usha Bai & K. Venkataramiah ... ... ... 143
P. K. Mondal, B. S. Sarma & U. A. Sastry		Vibrational spectra & rotational isomerism of some acyl halides
<b>A simple method for the generation of <math>\cos^2</math>-type apodization filters</b>	460	J. Som, D. Bhaumik, D. K. Mukherjee & G. S. Kastha ... ... ... 149
B. S. Sarma & P. K. Mondal		$K\alpha_1, L\alpha$ and $L\beta$ X-ray satellites
<b>Detection &amp; parameter estimation of static optical signals by an annular aperture in the presence of background noise</b>	582	T. P. Sharma & V. K. Sastri ... ... ... 158
B. L. Mehta & B. N. Gupta		Atmospheric pressure broadening effects on spectral lines : A distribution relation
<b>Spatial filtering technique for restoration of aerial photographic images affected by vibrations</b>	776	P. C. Mehta ... ... ... 167
M. D. Wagh & S. V. Kanetkar		Evaluation of atom polarization from infrared intensity measurements
<b>Images of truncated sine- &amp; square-wave periodic objects in the presence of transverse sinusoidal vibrations</b>	842	D. S. Ranga Rao & G. Thyagarajan ... ... ... 242
K. Singh, N. K. Jain & R. Rattan		$^1L_a$ & $^1L_b$ Electronic bands & vibrational spectra of 2-bromo-4-chloro- & 4-bromo-2-chlorophenol
<b>Foveal luminosity in white light adaptation</b>	852	P. K. Mallick & S. B. Banerjee ... ... ... 296
Mahesh Chander, Santosh Manrai & S. R. Das		Vibrational spectra of some fluoroaminotoluenes
		S. J. Singh & S. M. Pandey ... ... ... 300
		Mössbauer spectroscopic study of thermal transformation of ferric hydroxide to $\alpha$ -Fe <sub>2</sub> O <sub>3</sub>
		B. N. Srivastava & R. P. Singh ... ... ... 311
		Infrared & ultraviolet absorption spectra of <i>p</i> -fluorobenzoyl chloride
		G. N. R. Tripathi, D. R. Singh & U. S. Tripathi ... ... ... 461
		Absorption spectra of mixed aqueous solution of KCl & PbCl <sub>2</sub>
		M. L. Mukherjee & B. N. Das ... ... ... 526
		Vibrational spectra of 2, 3, 4- & 2, 3, 6-trichlorophenois
		G. N. R. Tripathi & Sitaram ... ... ... 529
		Electronic & infrared absorption spectra of 3-methylisoquinoline
		M. A. Shashidhar ... ... ... 532
		Laser-excited Raman spectrum of 1,1,2-trifluoro 1,2,2-trichloro ethane
		Krishnaji & Rajendra Kumar Laloraya ... ... ... 585

Infrared spectra of 2, 4- & 2,6-dibromophenols in dilute solution state ...	597	Microwave absorption of binary mixtures in dilute solutions : morpholine, anilines & pyridines ...	370
B. K. Dwivedi, I. D. Singh & R. C. Maheshwari		A. Mathur, S. N. Sharma & M. C. Saxena	
Optical absorption spectrum of Pd <sup>2+</sup> doped in NH <sub>4</sub> Cl single crystal ...	654	Activation energies of plasticized polymers from dielectric data ...	373
S. V. J. Lakshman & A. Varada Rajulu		S. Jayaraman & A. V. Narasimham	
X-Ray line broadening study of kaolinite under dynamic heating ...	660	Dielectric relaxation processes in esters ...	448
S. Bhattacherjee & H. Bhattacharya		S. C. Srivastava & Dina Nath	
X-Ray intensity measurements using silicon solar cells ...	664	Study of dielectric relaxation & measurement of dipole moments of esters : Part III—Acetates & acetoacetates ...	692
A. Bhaskara Rao & G. R. Padmanabhan		B. S. Rajyam & C. R. K. Murty	
Qualitative spectrographic analysis of <i>Escherichia coli</i> ...	722	Study of dielectric relaxation & measurement of dipole moments of esters : Part IV—Amyl esters ...	697
Pradip N. Ghosh		B. S. Rajyam & C. R. K. Murty	
Electronic absorption spectrum of 4-methyl pyrimidine ...	726	Electric dipole moment & dielectric relaxation of some esters in benzene solution ...	701
M. A. Shashidhar		H. D. Purohit, H. S. Sharma & A. D. Vyas	
Infrared absorption spectra of 1-methoxy & 1-ethoxynaphthalene ...	727		
D. Marjit & S. B. Banerjee			
<b>Crystallography</b>			
Trombay automatic deffractometers : A 3-dimensional fully automatic neutron diffractometer ...	121	Ultrasonic velocities in & compressibilities of rare earth electrolytes in aqueous solutions	509
S. N. Momin, A Sequeira & R. Chidambaram		N. Saraswathi, D. K. Koppikar, S. Soundararajan & M. V. Lele	
Diffraction intensities from radially thick curved crystallites—A numerical analysis ...	230	Ultrasonic studies in mixed liquid crystals ...	648
S. Bhattacherjee & B. K. Mathur		C. G. Kartha, J. R. Otta & A. R. K. L. Padmini	
Use of integrated minimum function in heavy atom molecules to identify vectors between heavy & light atoms ...	261	Effect of concentration on ultrasonic velocity in aqueous solutions of the sulphate & thiosulphate of magnesium ...	725
M. Seshasayee		Vr. Ramanathan & K. Ramanathan	
Theoretical study of nature of spin interaction of a magnetic lattice ...	265		
Krishna K. Dayanidhi			
Semi-cumulative function tests for centrosymmetry for the random permutation method	444	<b>Instrumentation</b>	
V. Parthasarathi & S. Parthasarathi		Trombay automatic diffractometers : A 3-dimensional fully automatic neutron diffractometer ...	121
<b>Dielectrics &amp; Microwaves</b>			
Simple microwave interferometer for measurement of electric permittivity & losses of liquids at 4.23 mm wavelength ...	268	S. N. Momin, A. Sequeira & R. Chidambaram	
R. K. Khanna & J. Sobhanadri		Simple attachment to a Debye-Scherrer camera for use at low temperatures ...	397
Hydrogen bonding in some trifluoro compounds ...	273	V. T. Deshpande, S. V. Suryanarayana & P. Pallayya	
H. D. Purohit, H. S. Sharma & A. D. Vyas		Operation of an argon-filled wire electrode streamer chamber ...	791
D. Majumdar, K. Majumdar & J. P. Mundra			

## Author Index

### A

<b>Abdulla, A. A.</b> <i>see</i> Girgis, R. K. ...	290
<b>Abhai Mansingh</b> <i>see</i> Mansingh, Abhai	483
<b>Agarwal, B. K.</b> <i>see</i> Watal, C. ...	232
<b>Agarwal, L. D.</b> Effect of crystal potential on the electronic polarizabilities & radii of ions of alkali halide crystals ... <i>see</i> Jai Shanker ...	85 81, 855
<b>Agarwal, P.</b> : <i>see</i> Banerjee, A. K. ... <i>see</i> Gupta, R. C. ... <i>see</i> Parveen Mirza (Miss) ...	768 790 716
<b>Agarwala, R. P.</b> <i>see</i> Anand, M. S. ...	689
<b>Aggarwal, Keshav</b> <i>see</i> Verma, Ajit Ram ...	350
<b>Agrawal, B. M.</b> : Spectral response of the magnetically polarized naphthalene ... Variation in magnetic susceptibility of magnetically polarized naphthalene ...	95 404
<b>Agrawal, V. K.</b> : Entropy of formation of Schottky defects in CsCl-type crystals ...	168
<b>Al-Husseini, J.</b> <i>see</i> Girgis, R. K. ...	290
<b>Ambardekar, D. S.</b> <i>see</i> Kulkarni, V. S. ...	793, 800
<b>Anand, M. S.</b> : Binding energy measurements in Al-Co system ...	689
<b>Anil Kumar</b> : Higher order corrections to low temperature thermal conductivity of <i>n</i> -Ge ...	323
<b>Anjaneya Sastry, B.</b> : ESR studies on thiocyanato triethylene tetramine copper (II) thiocyanate ...	632
<b>Aruldhas, G.</b> <i>see</i> Padmaja, K. M. ... <i>see</i> Sreenivasan, S. ... <i>see</i> Unnikrishnan Nayar, V. ...	658 307 237
<b>Asgekar, V. B.</b> : Beam current losses in race track microtron ...	339
<b>Asha Goel (Kum.)</b> <i>see</i> Goel, Asha ...	303
<b>Ashish Kumar Banerjee</b> <i>see</i> Banerjee, Ashish Kumar ...	539
<b>Ashok Kumar</b> <i>see</i> Lal, H. B. ...	210

### B

<b>Babu Joseph, K.</b> : Triangular matrices in the theory of molecular vibrations ...	736
<b>Bagree, K. R.</b> <i>see</i> Kher, V. G. ...	320
<b>Bakore, P. V.</b> <i>see</i> Soni, Ramesh Chandra ... <i>see</i> Soni, R. C. ...	561
<b>Balasubramanian, S.</b> <i>see</i> Navaneethakrishnan K. ...	675
<b>Bandopadhyay, Kalpana</b> <i>see</i> Gopa Saha ...	614
<b>Bandopadhyaya, T. K.</b> <i>see</i> Farkya, V. K. ...	465
<b>Banerjee, (Miss) A. K.</b> : Application of broad line NMR technique to the study of amino group rotation in organic solids ... <i>see</i> Gupta, R. C. ...	768 790

<b>Banerjee, Ashish Kumar</b> : Linearization of thermocouples ...	... 303
<i>see</i> Tandon, Purnima (Miss) ...	... 533
<b>Banerjee, P.</b> <i>see</i> Biswas, B. N. ...	... 224
<b>Banerjee, R. S.</b> : Optimized double configuration wavefunctions of lowest $^1D$ state of four-electron atomic systems ...	... 713
<b>Banerjee, S. B.</b> <i>see</i> Mallick, P. K. ... <i>see</i> Marjit, D. ...	... 296 ... 727
<b>Barua, A. K.</b> <i>see</i> Evelyn Guha ...	... 103
<b>Barua, Jayanthimala</b> <i>see</i> Krori, K. D. ...	167, 430, 818
<b>Basu, B. N.</b> : Nonlinear second harmonic generation in bounded cold beam-hot plasma systems ...	... 35
<b>Basu, Paritosh</b> <i>see</i> Sengupta, R. ...	... 823
<b>Bawa, S. S.</b> <i>see</i> Mansingh, Abhai ...	... 483
<b>Begum, N. A.</b> : Magnon contribution to specific heat of some anti-ferromagnetic perovskites ...	... 420
<b>Bell, M. J.</b> <i>see</i> Malvadkar, S. B. ...	... 440
<b>Bhadra, S.</b> <i>see</i> Srivastava, S. B. ...	... 783
<b>Bhaduri, A.</b> : Structural properties of some mixed oxidic spinels ...	... 745
<b>Bhalla, R. K.</b> <i>see</i> Asgekar, V. B. ...	... 237
<b>Bhandari, N.</b> : Characteristics of phosphate glasses developed as a dielectric solid state particle track detector ...	... 834
<b>Bhandari, R. C.</b> <i>see</i> Jhamb, B. ... <i>see</i> Lal Chaurasia, P. B. ... <i>see</i> Saxena, N. S. ...	... 109, 362, 386 ... 663 ... 175
<b>Bhaskara Rao, A.</b> : X-ray intensity measurements using silicon solar cells ...	... 664
<b>Bhatnagar, C. S.</b> <i>see</i> Agrawal, B. M. ... <i>see</i> Deshpande, Ajit N. ... <i>see</i> Kavathekar, A. K. ... <i>see</i> Rojindar, A. P. ... <i>see</i> Sharma, S. P. ...	... 95, 404 ... 254 ... 138 ... 849 ... 729
<b>Bhatnagar, M. L.</b> : Dependence of Young's modulus on zinc content in $\alpha$ -phase copper & silver brasses ...	... 245
<b>Bhatnagar, T. N.</b> <i>see</i> Sharma, S. R. ...	... 760
<b>Bhatt, B. C.</b> <i>see</i> Joshi, J. C. ...	... 458
<b>Bhatt, V. P.</b> : Electrolytic etching of dislocations in Bi-Sb crystals ...	... 522
Reactivity of some dislocation etchants on the cleavage plane of Bi, Sb & Bi-Sb alloy single crystals ...	... 807
<b>Bhattacharjee, B.</b> : Breakdown potential of air column with crossed rf & dc electric fields ...	... 760
<b>Bhattacharya, H.</b> <i>see</i> Bhattacharjee, S. ...	... 660
<b>Bhattacharya, R. C.</b> <i>see</i> Ghosh, P. K. ...	... 412
<b>Bhattacharjee, S.</b> : Diffraction intensities from radially thick curved crystallites—A numerical analysis ...	... 230
X-ray line broadening study of kaolinite under dynamic heating ...	... 663

Bhattacherjee, S. P. : Pseudo-dipolar anisotropy in cubic FeGe	... ...	535	Datta, S. <i>see</i> Evelyn Guha	... ...	103	
The nature of spin arrangement in cubic FeGe	... ...	408	Daw, A. N. <i>see</i> Sinha, T.	... ...	680	
Bhaumik, D. : <i>see</i> Som, J.	... ...	149	Dayanidhi, Krishna K. : Theoretical study of nature of spin interactions of a magnetic lattice	... ...	265	
Bhiday, M. R. <i>see</i> Asgekar, V. B.	... ...	237	Deshpande, Ajit N. : Field & temperature effect on charge distribution on faces of cubical magneto-electrets of perspex	... ...	254	
Bhide, G. K. <i>see</i> Rangarajan, L. M. <i>see</i> Rao, S. M. D.	... ...	99	Deshpande, D. A. <i>see</i> Kher, V. G.	... ...	736	
Bhoraskar, V. N. <i>see</i> Asgekar, V. B.	... ...	358	Deshpande, V. T. : Simple attachment to a Debye-Scherrer camera for use at low temperatures	... ...	397	
Biswas, A. B. <i>see</i> Bhaduri, A.	... ...	237	Dina Nath <i>see</i> Shrivastava, S. C.	... ...	448	
Biswas, A. K. <i>see</i> Sinha, T.	... ...	745	Dixit, L. <i>see</i> Parvez Ahmad	... ...	489	
Biswas, B. N. : A multiloop multifilter phase-locked demodulator	... ...	680	<i>see</i> Sanyal, Nitish K. ...	155,393,437, 495,550,601		
Borgohain, P. <i>see</i> Krori, K. D.	... ...	224	Dubey, K. S. : Effect of Debye temperature on lattice thermal conductivity	... ...	788	
Borle, W. N. : Nature of transformations at (111) ( $\bar{1} \bar{1} \bar{1}$ ) incoherent crystal boundary in silicon crystals	... ...	847	Effect of point imperfection on lattice thermal conductivity of an insulator at high temperatures	... ...	720	
<b>C</b>						
Caligaris, R. E. : Evaluation of third virial coefficients using the Morse potential function for argon, krypton & xenon	... ...	707	Phonon conductivity of $Mg_2Ge$ , $Mg_2Si$ & $Mg_2Sn$ ...	... ...	468	
Chakrabarti, C. G. : On the generalization of Einstein's fluctuation probability	... ...	827	Specular reflection & phonon conductivity of semiconductor LiF	... ...	247	
Chakraborty, (Kum.) Ganga <i>see</i> Rama Swami	329,334	514	Durgapal, M. C. : Modified Hoyle Fowler model for quasars	... ...	457	
Chakravarti, A. K. : Effect of flux on decay & thermoluminescence of CaS : Zr phosphors	... ...	321	Dwivedi, B. K. : Infrared spectra of 2,4- & 2,6-dibromophenols in dilute solution state	... ...	597	
Effect of flux on emission characteristics of CaS : Zr phosphors	... ...	121	603	<b>E</b>		
Chandra Shekhar : Threshold energy for impact in GaAs	... ...	179	Edkie, R. G. <i>see</i> Damle, J. P.	... ...	43	
Chatterjee, S. N. <i>see</i> Kaushik, S. B.	... ...	389	El-Rawi, O. <i>see</i> Girgis, R. K.	... ...	290	
Chaudhary, D. R. <i>see</i> Lal Chaurasia, P. B.	... ...	663	Elumalai, K. : Influence of atomic mass on the Coriolis coupling constants in some $XY_4$ -type molecules	... ...	598	
Chaudhuri, A. K. : Electrical conductivity of evaporated tellurium films	... ...	399	Influence of atomic mass on the Coriolis coupling constants in some $XY_4$ -type molecules : $XCl_4$ molecules	... ...	462	
X-ray studies of lattice defects in chemically deposited thin films of silver	... ...	156	Evelyn Guha : On the formation of double molecules in dipolar & quadrupolar gases	... ...	103	
Chaudhuri, K. D. <i>see</i> Mahajan, S. K. <i>see</i> Mukerjee, A. K.	... ...	514	608	<b>F</b>		
Chauhan, A. S. <i>see</i> Pratap Singh	... ...	321	Farkya, V. K. : Dielectric investigation of plasma in some semiconductors	... ...	465	
Chidambaram, R. <i>see</i> Momin, S. N.	... ...	250	546	<b>G</b>		
Chiplonkar, V. T. : Augmentation of electrical conductivity of soda glass due to impact of $Ar^+$ ions	... ...	680	Ganga Chakraborty (Kum.) <i>see</i> Chakraborty, (Kum.) Ganga	... ...	334,329	
Choudhury, N. K. D. <i>see</i> Sinha, T.	... ...	526	Garg, H. C. <i>see</i> Agrawal, V. K.	... ...	168	
Cyvin, S. J. : Symmetry coordinates for the tetrahedral $X(YZ_3)_4$ model	... ...	760	Ghosh, C. <i>see</i> Verma, B. P.	... ...	670	
<i>see</i> Unnikrishnan Nayar, V.	... ...	852	Ghosh, P. K. : Cathodoluminescence & decay studies of CaS : As phosphor	... ...	188	
Damle, J. P. : Electrode glows in aqueous solutions	... ...	465	412	Stress induced ferromagnetic phases in ferrous alloys	... ...	412
Das, B. N. <i>see</i> Mukherjee, M. L.	... ...	412	103			
Das, S. P. <i>see</i> Bhattacharjee, P.	... ...					
Das, S. R. <i>see</i> Mahesh Chander	... ...					
Das Gupta, S. M. <i>see</i> Farkya, V. K.	... ...					
Datta, G. <i>see</i> Ghosh, P. K.	... ...					
Datta, K. K. <i>see</i> Evelyn Guha	... ...					

INDEX

Ghosh, Pradip N. : Qualitative spectrographic analysis of <i>Escherichia coli</i> ...	722	I
Girgis, R. K. : Decay scheme of $^{104}\text{Rh}$ ...	290	
Girijavallabhan, C. P. <i>see</i> Babu Joseph, K.		
Goel, (Kum.) Asha : Lattice dynamical study of gold & silver by means of modified de-Launay model : Part I ...	339	
Goel, R. K. <i>see</i> Sharma, D. K. ...	455	
Goel, S. P. : Energy spectra of pions & $\Sigma$ -hyperons produced from $K^-$ -capture ...	570	J
Hyperfragments & double $\Lambda$ -hyperfragments produced from $\Xi^-$ -captures ...		
Nuclear capture at rest of $\Xi$ -hyperons	213	
Nuclear cascade & range of spallation hyperfragments ...	51	
On the two-neutron absorption of $K^-$ -mesons ...	286	
Gogawale, S. V. <i>see</i> Chiplonkar, V. T. ...	367	
Gohel, V. B. : Vibrational & rotational properties of <i>ab initio</i> potential curve of $^6\text{Li}^{19}\text{F}$	614	
Gopa Saha : A simple model of the galaxy with an algebraic density law ...	575	
Gopala Rao, R. V. : Self-consistent approximation for the radial distribution functions of liquid argon ...	250	
Gopalakrishna Murthy, P. V. : EPR & optical absorption studies on certain copper complexes ...	394	
Goswami, A. : Optical properties of cuprous sulphide films ...	21	
Structural & optical properties of indium arsenide films ...	17	
<i>see</i> Goswami, Amit P. ...	26	
Goswami, Amit P. : Dielectric & structural properties of vacuum deposited niobium oxide films ...	667	
Goswami, K. N. : X-ray study of changes of structure of artinite on heat treatment ...	81	
Goyal, S. C. <i>see</i> Jai Shankar ...	707	
Grangel, J. C. <i>see</i> Caligaris, R. E. ...	823	
Guha, A. <i>see</i> Sengupta, R. ...	103	
Guha, Evelyn : On the formation of double molecules in dipolar & quadrupolar gases	502	
Guha Sarkar, G. <i>see</i> Venkatesh, H. G. ...	582	
Gupta, B. N. <i>see</i> Mehta, B. L. ...	790	
Gupta, R. C. : PMR studies on intramolecular rotation in solid <i>p</i> -aminophenol ...	768	
<i>see</i> Banerjee, (Miss) A. K. ...	716	
<i>see</i> Mirza, (Miss) Parveen ...	533	
<i>see</i> Tandon, (Miss) Purnima ...	57	
Gupta, S. C. : Edge structure patterns in $\text{Li}_2\text{O}_3$ using ruby laser... ...	786	
<i>see</i> Sawinder Singh ...	133	
Gupta, S. D. : Diffraction images of coherently illuminated objects in the presence of spatial frequency amplitude filters ...	434	
<i>see</i> Srivastava, A. K.... ...	389	
Gupta, S. R. <i>see</i> Kaushik, S. B. ...	772	
H		
Hanjura, A. K. <i>see</i> Sharma, R. S. ...	394	
Haranadh, C. <i>see</i> Gopalakrishna Murthy, P.V.	317	
Hari Mohan <i>see</i> Prakash, S. G. ...		
Iqbal Krishan : Photo-sensitivity of dialkyl aniline solutions in carbon tetrachloride ...	596	
Jai Shanker : Fractional ionic character & effective ionic charges in alkali & silver halide crystals ... ... ...	81	
On the correlation between electronic polarizabilities & radii of ions ...	286	
<i>see</i> Agarwal, L. D. ...	575	
<i>see</i> Jain, J. K. ...	250	
Jain, J. K. : Electronic polarizabilities & sizes of ions in alkaline earth halide crystals with the fluorite structure ...	367	
Jain, K. L. <i>see</i> Ghosh, P. K. ...	614	
Jain, Madhu <i>see</i> Madhu Jain ...	47	
Jain, N. K. <i>see</i> Singh, K. ...	394	
Jain, R. P. : Pseudo-Grüneisen parameter of pure liquids & liquid metal alloys ...	394	
Jain, S. C. <i>see</i> Jhamb, B. ...	21	
<i>see</i> Madhu, Jain ...	17	
Jain, V. K. <i>see</i> Murthy, K. B. S. ...	17	
Jain, Vinaya K. : 16.7 MeV state of $^5\text{He}$ in the cluster model ...	26	
Jamwal, K. K. S. : Study of the stability characteristics of compound connections ...	667	
Janardan Singh : Franck-Condon factors & <i>r</i> -centroids for $A^1\Pi - X^1\Sigma^+$ system of $\text{GeO}$ molecule ...	81	
Jarori, J. S. : Decay & thermoluminescence of $\text{CaS}$ : Sb phosphors...	707	
Jaseja, T. S. <i>see</i> Kumar, B. ...	823	
Jayantimala Barua <i>see</i> Krori, K. D. 167, 430, 818	103	
Jayaraman, S. : Activation energies of plasticized polymers from dielectric data ...	502	
Jha, K. M. : Explanation of temperature variation of physical properties of metals & insulators on the basis of temperature dependence of mean free-path of electrons & phonons ...	582	
Transport processes in a thermocouple ...	790	
Jhamb, B. : Frequency-dependent friction constants & its implication to single particle properties of liquid metals : $\text{Na}$ & $\text{Pb}$ 109	768	
Hard-sphere memory function for liquid metals ...	716	
Triplet correlations in liquid neon along 35-05 K isotherm ...	533	
Joshi, J. C. : Absorption & emission spectra of $\text{CdI}_2$ : Mn phosphor ...	57	
Luminescence characteristic of $\text{Mn}^{3+}$ in $\text{LaCl}_3$ ...	133	
Joshi, R. V. : Glow curves of thermally pre-treated $\text{NaCl}$ : Sr crystals ...	434	
772	389	
317	389	
79	317	
869	389	

## K

- Kalpana Bandopadhyay *see* Gopa Saha ... 614  
 Kanetkar, S. V. *see* Wagh, M. D. ... 776  
 Kartha, C. G. : Ultrasonic studies in mixed liquid crystals ... 648  
 Kasmir Raja, S. V. : Compliance constants for some metal-carbon & metal-oxygen bonds ... 554  
*Kastha*, G. S. *see* Som, J. ... 149  
 Katti, V. R. *see* Rangarajan, L. M. ... 99  
 Kaushik, S. B. : Mass spectrometric determination of tritium in neutron-irradiated lithium fluoride ... 389  
 Kavathekar, A. K. : Diffraction images of truncated periodic objects formed by a diffraction-limited imaging system with an annular aperture ... 138  
 Keer, H. V. *see* Bhaduri, A. ... 745  
*Kekan*, N. L. *see* Joshi, R. V. ... 79  
 Kesharwani, Krishna Murari : Local elastic constants in dilute Mo-Re alloy ... 811  
 Keshav Aggarwal *see* Verma, Ajit Ram ... 350  
 Khan, M. H. : *see* Maheshwari, R. C. ... 32, 732  
 Khan, Z. H. : Absorption spectra of naphthalene, anthracene & phena threne cations in boric acid glass in the region 600-1400 nm ... 66  
 Khanna, B. N. *see* Khan, Z. H. ... 66  
*see* Mohamed, K. A. ... 77, 243  
 Khanna, R. K. : Simple microwave interferometer for measurement of electric permittivity & losses of liquids at 4.23 mm wavelength ... 268  
*Khare*, M. L. *see* Rojindar, A. P. ... 849  
 Kher, V. G. : Polarization of  $\text{BaTiO}_3$  &  $\text{KNbO}_3$  single crystals with variation of applied ac electric field ... 736  
 Kondaiah, E. *see* Rama Prasad, P. ... 640  
 Koppikar, D. K. *see* Saraswathi, N. ... 509  
 Kostin, M. D. *see* Malvadkar, S. B. ... 440  
*Koul*, S. L. *see* Virk, H. S. ... 850  
*Krishan Lal* *see* Verma, Ajit Ram ... 350  
*Krishna*, B. *see* Srivastava, A. K. ... 434  
 Krishna Kumar : Growth of ammonium bromide crystals from the vapour phase ...  
*Krishnaji* : Laser-excited Raman spectrum of 1, 2, 2-trifluoro, 1, 2, 2-trichloroethane ...  
 Krishnan, V. G. *see* Sathyaranayanan, S. G. ...  
 Krori, K. D. : Gravitonic mass & cosmological constant ... 519  
     Magnetic energy & cylindrically symmetric distribution of matter in equilibrium in general relativity ... 585  
     Massive spheres with constant density cores & two variable-density outer shells in general relativity ... 591  
     Massive spheres with three variable-density distributions in general relativity ... 167  
     Massive spheres with two constant-density inner layers & a variable density outer layer in general relativity ... 818  
     On the interior metric of a charged-dust cylinder in general relativity ... 854  
     ... 423  
     ... 616  
     ... 430

- Kulkarni, D. K. : X-ray spectroscopic study of some copper manganites ... 60  
 Kulkarni, V. S. : Effect of field strength & frequency on (Zn, Cd) S : Cu, Mn phosphors ... 800  
     Spectral energy distribution & voltage-frequency dependence of Cu-activated ZnS phosphors ... 793  
 Kumar, B. : Multiple-photon excitations in molecular crystals by giant pulse ruby laser ... 626  
*Kumar*, S. *see* Bhandari, N. ... 834

## L

- Lakshman, S. V. J. : Optical absorption spectrum of  $\text{Pd}^{3+}$  doped in  $\text{NH}_4\text{Cl}$  single crystal ... 654  
 Lal Chaurasia, P. B. : Estimation of effective thermal conductivity of porous media by means of a nomogram ... 663  
 Lal, H. B. : Electrical conductivity of calcium tungstate single crystals ... 539  
*Lal*, K. M. *see* Mohamed, K. A. ... 243  
 Laloraya, Rajendra Kumar *see* Krishnaji ... 585  
*Laroia*, K. K. *see* Kaushik, S. B. ... 389  
 Lele, M. V. *see* Saraswathi, N. ... 509

## M

- Madhu Jain : A simple model pseudopotential for metals—Application to aluminium ... 171  
 Mahajan, S. K. : Ultrasonic absorption in the normal & superconducting states of tin & indium ... 343  
     Ultrasonic attenuation in intermediate state of tin ... 258  
*see* Mukerjee, A. K. ... 514  
 Mahanta, P. C. *see* Rahman, A. ... 238, 815  
 Mahesh Chander : Foveal luminosity in white light adaptation ... 852  
 Maheshwari, R. C. : Voltage & frequency dependence of electroluminescent brightness of  $\text{ZnS}$ : Cu, Sn phosphor ... 32  
     Voltage & frequency dependence of spectral distribution & electroluminescent brightness of (Zn, Cd, Hg) S : Cu, Ga, In luminophor ... 732  
*see* Dwivedi, B. K. ... 597  
 Majumdar, D. : Operation of an argon-filled wire electrode streamer chamber ... 791  
 Majumdar, K. *see* Majumdar, D. ... 791  
 Mallick, P. K. :  $^1L_a$  &  $^1L_b$  electronic bands & vibrational spectra of 2-bromo-4-chloro-& 2-bromo-2-chlorophenol ... 296  
 Malvadkar, S. B. : Drift velocities & energy distribution of large molecules in the upper atmosphere ... 440  
 Man Mohan *see* Narula, R. C. ... 92  
*see* Thyagarajan, R. ... 740  
 Mande, Chitamani *see* Kulkarni, D. K. ... 60  
*see* Sapre, V. B. ... 74

## INDEX

		<b>N</b>
483		
		<b>Nammalvar, T. see Gopala Rao, R. V.</b> ... 47
377		Nanda, D. P. : Extended Hückel calculations of molecular parameters of calcium halide ... ... ... 704
645		Nangia, O.P. : Activation of zinc sulphide phosphors by metallic impurities 612
727		Narasimha Sarma, C. R. <i>see</i> Gopalakrishna Murthy, P. V. ... ... ... 394
370		Narasimha Swamy, K. : Excess entropy of mixing liquids ... ... ... 202
230		<i>see</i> Gopala Rao, R. V. ... ... ... 47
		Narasimham, A. V. : Complex compressibility of a liquid ... ... ... 557
582		<i>see</i> Jayaraman, S. ... ... ... 373
		Narula, R. C. : Growth of $\text{CaWO}_4\text{-Nd}^{3+}$ single crystals by Czochralski technique ... 92
167		<i>see</i> Thyagarajan, R. ... ... ... 740
		Naseebdar : <i>see</i> Lal, H. B. ... ... ... 539
592		Naseer Ahmad <i>see</i> Singh, H. ... ... ... 382
786		Navaneethakrishnan, K. : Effect of spatial variation of dielectric function & of effective mass on ground states of shallow donors in Si & Ge ... ... ... 675
768		Nema, R. S. : Characteristics of discharge pulses in low pressure power frequency discharges ... ... ... ... 39
622		Rectification in electrical discharges ... 75
156		<i>see</i> Shivkumar, B. ... ... ... 163
		<b>O</b>
77		
206		
704		
645		Oli, R. C. : Test for scaling in multiplicity distribution in high energy $\pi$ - $p$ collisions 839
162		Om Prakash : A dielectric mask for GaAs devices ... ... ... 160
121		Fabrication of gold-n-type gallium arsenide Schottky barrier varactor diodes ... 7
		Otta, J. R. <i>see</i> Kartha, C. G. ... ... ... 648
		<b>P</b>
		Padmaja, K. M. : Parametric study of potential energy distribution ... ... ... 658
		Padmanabhan, G. R. <i>see</i> Bhaskara Rao, A. ... ... ... 664
514		Padmini, A. R. K. L. <i>see</i> Kartha, C. G. ... 648
343		Pahwa, D. R. <i>see</i> Verma, Ajit Ram ... 350
713		Pallayya, T. <i>see</i> Deshpande, V. T. ... 397
149		Palki, B. A. <i>see</i> Kher, V. G. ... ... ... 736
70		Pande, B. M. <i>see</i> Anand, M. S. ... ... ... 689
713		Panedy, A. N. <i>see</i> Sharma, D. K. ... ... ... 455
		Pandey, B. R. <i>see</i> Tripathi, R. S. ... ... ... 64
		Panedy, C. P. <i>see</i> Sanyal, Nitish K. ... ... ... 437
724		Panedy, J. D. <i>see</i> Jain, R. P. ... ... ... 830
		<i>see</i> Thakur, K. P. ... ... ... 779
		Panedy, S. M. <i>see</i> Singh, S. J. ... ... ... 300
		Pandian, S. J. <i>see</i> Kasmir Raja, S. V. ... ... ... 554
		Pandya, G. R. <i>see</i> Bhatt, V. P. ... ... ... 522, 807

Parashar, T. R. <i>see</i> Narula, R. C.	92	Rajendra Kumar Laloraya <i>see</i> Krishnaji	585
<i>see</i> Thyagarajan, R. ...	740	Rajesh Kumar <i>see</i> Joshi, J. C. ...	315,458
Paritosh Basu <i>see</i> Sengupta, R. ...	823	Rajput, K. S. : Determination of characteristic self capacitance & self inductance of a discharge oscillator ...	463
Parthasarathi, V. : Semi-cumulative function tests for centrosymmetry for the random permutation method ...	444	Rajyam, B. S. : Study of dielectric relaxation & measurement of dipole moments of esters: Part III—Acetates & acetoacetates ...	692
Parthasarathy, S. <i>see</i> Parthasarathi, V. ...	444	Part IV—Amyl esters ...	697
Parveen Mirza (Miss) : Wide line proton resonance study of imidazole ...	716	Rama Prasad, P. : An assessment of the compound nucleus mechanism for 14 Mev neutron-induced reactions in rare-earth region of nuclei ...	640
Parvez Ahmad : Intramolecular force fields & vibrational mean amplitudes of some octahedral systems of $\text{Mo}_6^{n-}$ type ions ...	489	Rama Rao, J. <i>see</i> Rama Prasad, P. ...	640
<i>see</i> Sanyal, Nitish K. ...	155,437,601	Rama Swami : Effect of intense magnetic field on the recombination process in semiconductor devices : Part I—Theoretical study ...	329
Patel, B. S. : Effect of rotational relaxation on the sequentially Q-switched carbon-dioxide laser transitions ...	129	Part II—Experimental study ...	334
Patel, G. K. : Franck-Condon factors & r-centroids for the bands of $A^2\Pi - X^2\Sigma$ system of magnesium hydride ...	244	Ramanathan, K. <i>see</i> Ramanathan, Vr. ...	725
Patnaik, A. N. : Validity of modified Rao's rule in liquids of oxygen & nitrogen ...	276	Ramanathan, Vr. : Effect of concentration on ultrasonic velocity in aqueous solution of the sulphate & thiosulphate of magnesium ...	725
Pimpale, S. G. : Influence of time on emission of pulses in air at a moderate pressure under dc excitation ...	72	Ramasasty, K. S. : Calculation of electric field gradient tensor & NQR frequencies ...	69
Studies on hysteresis & antihysteresis in induced (electrodeless) discharges under perfect dark illumination ...	565	NQR spectra of $^{79}\text{Br}$ & $^{81}\text{Br}$ ...	281
Prabhat Singh <i>see</i> Goswami, A. ...	17	Ramchandra : Amplification of ultrasonic waves in piezoelectric semiconductor on the interaction with an electron beam ...	233
Prakash, S. G. : Radiation-controlled electroluminescence under concurrent action of electric field & ultraviolet radiation ...	317	Amplification of ultrasonic waves in piezoelectric semiconductor through interaction with deformation potential ...	235
Prakash, Y. <i>see</i> Goel, S. P. ...	51,213,286,570,575	Excitation of electro-magnetic waves by electric ring source in magnetized cylindrical solid state plasma column ...	192
Prasad, H. C. <i>see</i> Singh, R. N. ...	594	Radiation from a line source of magnetic current in cylindrical semiconductor plasma column ...	757
Pratap Singh : Dosimetric study of changes due to X-ray doses in the dielectric conductance of thin film capacitors ...	165	Radiation from an electric ring source in plasma environment ...	657
X-ray dosimetric study of Bharat Electronics (BEL) solid state devices... ...	321	Ramesh Chandra Soni : Theory of an inhomogeneous solid state plasma waveguide in a longitudinal magnetic field ...	320
Premaswarup, D. <i>see</i> Ramasasty, K. S. ...	69,281	Ranade, J. D. <i>see</i> Chakravarti, A. K. ...	603,608
<i>see</i> Rangacharyulu, M. ...	636	Ranga Rao, D. S. : Evaluation of atom polarization from infrared intensity measurements ...	242
Purnima Tandon (Miss) : NMR study of solid hippuric acid ...	533	Rangacharyulu, M. : Zeeman effect of NQR lines in methyl-p-iodobenzoate & methyl-m-iodobenzoate ...	636
Purohit, H. D. : Electric dipole moment & dielectric relaxation of some esters in benzene solution ...	701	Rangarajan, L. M. : Experimental study of background brightness in image tubes ...	99
Hydrogen bonding in some trifluoro compounds ...	273	Rao, B. V. <i>see</i> Goswami, A. ...	17,21
Rao, S. M. D. : Growing optical grade lithium fluoride single crystals using a Bridgman-type vacuum furnace ...	462,598	Rao, S. M. D. : On the decay of $^{108}\text{Rh}$ ...	358
Rahman, A. : Current-voltage characteristics of bismuth-bismuth oxide-indium sandwich structures at room temperature ...	238	Rattan, R. <i>see</i> Singh, K. ...	842
Oxide growth on bismuth films & aging effect on current density through the sandwiched bismuth oxide layers ...	815	Reissland, J. A. <i>see</i> Begum, N. A. ...	420
Rai, R. S. <i>see</i> Singh Pratap ...	165	Rojindar, A. P. : Thermally stimulated currents in carnauba wax magneto-electrets ...	849
Rajan, T. V. : Estimation of activation energy of vacancy formation by quenching experiments ...	544	Roy, C. L. <i>see</i> Mukherjee, M. L. ...	70
<i>see</i> Mukherjee, M. L. ...		Roy, N. R. <i>see</i> Mishra, A. K. ...	622

## R

- Radhakrishnan, M. *see* Elumalai, K. ... 462,598  
 Rahman, A. : Current-voltage characteristics of bismuth-bismuth oxide-indium sandwich structures at room temperature ... 238  
 Oxide growth on bismuth films & aging effect on current density through the sandwiched bismuth oxide layers ... 815  
 Rai, R. S. *see* Singh Pratap ...  
 Rajan, T. V. : Estimation of activation energy of vacancy formation by quenching experiments ...

INDEX

**S**

- Saha, Gopa *see* Gopa Saha ... ...  
 Samal, K. *see* Patnaik, A. N. ... ...  
 Sankaranarayanan, P. E. : A negative resistance oscillator using a bistable circuit ...  
 Santosh Manrai *see* Mahesh Chander ...  
 Sanyal, Nitish K. : Evaluation of kinetic constants & vibrational mean amplitudes of  $\text{CX}_3^-$  systems ... ...  
     Kinetic & potential constants of tetrahedral thio & seleno anions ... ...  
     Mean amplitudes of vibration of some lanthanide trifluorides ... ...  
     Mean amplitudes of vibration of some trihalide ions ... ...  
     On the molecular vibration analysis of  $\text{PS}_3^-$  ion ... ...  
     Spectroscopic studies in mean amplitudes of vibration of pentafluorides of arsenic, phosphorus & vanadium ... ...  
     *see* Parvez Ahmad ... ...  
 Sapre, V. B. :  $K$  absorption edge of germanium in some dichalcogenides ... ...  
 Saraswathi, N. : Ultrasonic velocities in & compressibilities of rare earth electrolytes in aqueous solutions ... ...  
 Sarita Swami (Miss) *see* Mehta, P. C. ...  
 Sarma, B. S. : A simple method for the generation of  $\cos^2$ -type apodization filters ...  
     *see* Mondal, P. K. ... ...  
 Sastry, B. A. : Studies of ground state wave-function of  $\text{Cu}^{2+}$  ion in  $\text{K}_2\text{CO}(\text{SO}_4)_2 \cdot 6\text{H}_2\text{O}$   
 Sastry, C. S. *see* Sastry, B. A. ... ...  
 Sastry, C. V. : Chiral symmetry breaking & the  $K\text{-}\bar{N}\sigma$  term ... ...  
 Sastry, U. A. *see* Mondal, P. K. ... ...  
 Sastry, V. K. *see* Sharma, T. P. ... ...  
 Sathyanarayan, S. G. : ESR study of pentacoordinated  $\text{NNN}'\text{N}'\text{N}''\text{N}'''$ -hexamethyl-3, 6-diazoctane-1, 8-diamine copper sulphate,  $\text{H}_2\text{O}$  ... ...  
 Satyamurthy, H. B. : Phase transitions of sodium nitrite-sodium nitrate mixed crystals ... ...  
 Savari Raj, G. A. *see* Kasmir Raja, S. V. ...  
 Sawinder Singh : Collisional damping of electromagnetic waves in plasma ... ...  
 Saxena, A. P. : Determination of electron temperature in a Lorentz plasma by sonic probe ... ...  
 Saxena, M. C. *see* Mathur, A. ... ...  
 Saxena, N. S. : Phonons in amorphous solids & their application to liquid metals ...  
 Saxena, R. K. *see* Saxena, A. P. ... ...  
 Sen Gupta, N. D. : On non-steady electric fields ... ...  
 Sengupta, R. : The phenomenon of solid-liquid transition ... ...  
 Sequeira, A. *see* Momin, S. N. ... ...  
 Seshasayee, M. : Use of integrated minimum function in heavy atom molecules to identify vectors between heavy & light atoms

- Shanker, R. : Determination of exchange parameters in some fcc type-2 Heisenberg anti-ferromagnets : HTS expansion method ... ... ... ... ... 589  
 614  
 276  
 220  
 852  
 437  
 155  
 495  
 393  
 601  
 489  
 74  
 509  
 592  
 460  
 395  
 748  
 748  
 846  
 395  
 158  
 591  
 71  
 554  
 786  
 198  
 370  
 175  
 198  
 114  
 823  
 121  
 261  
 Sharma, A. P. : A theory of the variation of mean gap length with charge in nuclear emulsions ... ... ... ... ... 13  
 Sharma, B. L. : An electronic impedance transformer for use with a selenium photovoltaic cell ... ... ... ... ... 452  
 Sharma, D. K. : Force constants & vibrational amplitudes of some octahedral hexahalo anions ... ... ... ... ... 455  
 Sharma, G. P. *see* Sharma, A. P. ... ... ... 13  
 Sharma, H. S. *see* Purohit, H. D. ... ... 273, 701  
 Sharma, R. R. *see* Rathore, I. V. S. ... ... 391  
 Sharma, R. S. : Gain stability of the difference amplifier ... ... ... ... ... 772  
     *see* Jamwal, K. K. S. ... ... ... 856  
 Sharma, S. C. *see* Srivastava, A. K. ... ... 434  
 Sharma, S. K. *see* Chandra Shekhar ... ... 179  
 Sharma, S. N. *see* Mathur, A. ... ... 370  
 Sharma, S. P. : Dielectric behaviour of polystyrene thermo-electrets ... ... ... ... ... 729  
 Sharma, S. R. : Plasma waves in a periodic structure carrying current ... ... ... ... ... 764  
 Sharma, T. P. :  $K_{\alpha 1}$ ,  $L_{\alpha}$  and  $L_{\beta}$  X-ray satellites ... ... ... ... ... 158  
 Sharma, Y. K. : Low frequency noise in the perfect insulated diode with shallow traps under the critical condition ... ... ... ... ... 524  
     Low frequency noise in space charge limited solid state diode neglecting diffusion ... ... ... ... ... 169  
 Shashidhar, M. A. : Electronic absorption spectrum of 4-methyl pyrimidine ... ... ... ... ... 726  
     Electronic & infrared absorption spectra of 3-methylisoquinoline ... ... ... ... ... 532  
 Shivkumar, B. : Breakdown of thin polythene films by surface discharges ... ... ... ... ... 163  
 Shrivastava, R. K. *see* Nema, R. S. ... ... 39  
     *see* Rajput, K. S. ... ... ... ... ... 463  
 Singh, B. P. *see* Rathore, I. V. S. ... ... 391  
 Singh, D. R. *see* Tripathi, G. N. R. ... ... 461  
 Singh, H. : NMR study of *bis* (thiourea) cobalt (II) complexes ... ... ... ... ... 382  
 Singh, I. D. *see* Dwivedi, B. K. ... ... 597  
 Singh, K. : Images of truncated sine- & square-wave periodic objects in the presence of transverse sinusoidal vibrations ... ... ... ... ... 842  
     *see* Kavathekar, A. K. ... ... ... ... ... 138  
 Singh, Prabhat *see* Goswami, A. ... ... ... ... ... 17  
 Singh, Pratap : Dosimetric study of changes due to X-ray doses in the dielectric conductance of thin film capacitors ... ... ... ... ... 165  
 Singh, R. A. *see* Shanker, R. ... ... ... ... ... 589  
 Singh, R. J. *see* Singh, H. ... ... ... ... ... 382  
 Singh, R. N. : Power law transfer characteristic of junction field effect transistors in magnetic field ... ... ... ... ... 594  
 Singh, R. P. *see* Srivastava, B. N. ... ... ... ... ... 311  
 Singh, S. : Role of oxygen &  $\text{La}^{3+}$  ions on the infrared spectra & growth patterns of the photocurrent in  $\text{ZnO}$  photoconductor ... ... ... ... ... 314  
     Thermally stimulated current curves in  $\text{ZnS}$  :  $\text{Cu}$  :  $\text{Co}$  photoconductor ... ... ... ... ... 185  
 873

Singh, S. J. : Vibrational spectra of some fluoroaminotoluenes ... ...	300	Thirugnanasambandam, P. : Molecular constants of some $XY_4$ square planar type molecules & ions ... ...	206
Singh, Sawinder <i>see</i> Sawinder Singh ...	786	Thyagarajan, G. : A simple method for exact solution of $2 \times 2$ secular equation in molecular vibrations ... ...	309
Singh, Triyug <i>see</i> Goel, S. P. ...	286	<i>see</i> Ranga Rao, D. S. ...	242
Sinha, S. P. : Atomization energies of diatomic heavier crystals & electron affinities of halides & chalcogenides ...	387	<i>see</i> Subhedar, M. K. ...	498
Sinha, T. : Effect of mobility gradation on excess carrier distribution & cut-off frequency of a diffused base transistor at different injection levels ...	680	Thyagarajan, R. : Growth of YIG single crystals by flux-melt technique ...	740
Sitaram <i>see</i> Tripathi, G. N. R. ...	529	<i>see</i> Narula, R. C. ...	92
Sivaramakrishnan, V. <i>see</i> Satyamurthy, H. B.	71	Tiwari, T. N. <i>see</i> Sastry, C. V. ...	846
Sivarama Sastry, G. <i>see</i> Anjaneya Sastry, B. <i>see</i> Sathyaranayanan, S. G. ...	632	Tripathi, G. N. R. : Infrared & ultraviolet absorption spectra of <i>p</i> -fluorobenzoyl chloride ...	461
Sneh (Kum.) : Debye-Waller factors of $\alpha$ -iron nickel, molybdenum & tungsten by lattice dynamical models ...	591	Vibrational spectra of 2, 3, 4- & 2, 3, 6-trichlorophenols ...	529
Lattice dynamical study of the recoilless fraction of iron-57 in nickel, molybdenum, tungsten, $\alpha$ -iron & copper ...	89	Tripathi, R. S. : Electronic absorption spectra of 3, 5- & 2,6-dichloropyridines ...	64
<i>see</i> Goel, (Kum.) Asha ...	182	Tripathi, U. S. <i>see</i> Tripathi, G. N. R. ...	461
Sobhanadri, J. <i>see</i> Khanna, R. K. ...	339	Triyug Singh <i>see</i> Goel, S. P. ...	286
Som, J. : Vibrational spectra & rotational isomerism of some acyl halides ...	268	Tuli, S. K. <i>see</i> Oli, R. C. ...	839
Soni, Ramesh Chandra : Theory of an inhomogeneous solid state plasma waveguide in a longitudinal magnetic field ...	149	Tyagi, D. K. <i>see</i> Singh, H. ...	382
Soni, R. C. : Studies on propagation of transverse & longitudinal waves in a plasma ...	320	Tyagi, M. S. : Microplasma switching & negative resistance in the avalanche breakdown region of silicon <i>p-n</i> junctions ...	1
Sood, P. C. <i>see</i> Mantri, A. N. ...	561		
Soundararajan, S. <i>see</i> Saraswathi, N. ...	377		
Sreenivasan, S. : Optically active vibrations— Rutile structures ...	509	<b>U</b>	
Srinivasan, S. <i>see</i> Satyamurthy, H. B. ...	307	Unnikrishnan Nayar, V. : Various mean-square amplitude quantities in carbonyl cyanide ...	78
Srivastava, A. K. : Calculation of polarographic half-wave reduction & oxidation potentials of alternant hydrocarbons ...	71	Upadhyay, P. N. : A study of the $X^0$ meson decaying into $\pi\pi\eta$ ...	49
Srivastava, B. B. <i>see</i> Jain, Vinaya K. ...	434	Usha Bai, P. : Vibrational spectra & normal vibrations of propionamides ...	143
<i>see</i> Sharma, Y. K. ...	117		
Srivastava, B. N. : Mössbauer spectroscopic study of thermal transformation of ferric hydroxide to $\alpha$ - $Fe_2O_3$ ...	169		
Srivastava, S. B. : Radiation-induced luminescence in benzene & cyclohexane matrices at low temperatures ...	311	<b>V</b>	
Srivastava, S. C. : Dielectric relaxation process in esters ...	783	Varada Rajulu, A. <i>see</i> Lakshman, S. V. J. ...	654
Subhedar, M. K. : Force constants of borazine & borazine- $d_6$ ...	448	Varma, B. P. : Evaluation of high quality phosphor screens for image tubes ...	670
<i>see</i> Thyagarajan, G. ...	498	Varma, S. K. <i>see</i> Jarori, J. S. ...	596
Sunta, C. M. <i>see</i> Murthy, K. B. S. ...	309	Ved Parkash <i>see</i> Kumar, B. ...	626
Suryanarayana, S. V. <i>see</i> Deshpande, V. T. ...	685	Venkata Ramiah, K. <i>see</i> Usha Bai, P. ...	143
	397	Venkatesh, H. G. : Interaction of sequence of laser pulses with a two-level system & explanation of photon echo ...	502
		Verma, Ajit Ram : A long X-ray topography camera & some X-ray topographic investigations of whisker crystals ...	350
		Verma, D. N. <i>see</i> Sanyal, Nitish K. ...	393
		Verma, J. S. <i>see</i> Ramchandra 192,233,235, 657, 757	
		Verma, R. L. : Secondary electron emission of amorphous alumina films ...	782
		Vijay Kumar <i>see</i> Verma, Ajit Ram ...	350
		Virk, H. S. : Fission track ages of some biotites of Bihar mica belt ...	850

**T**

Tandon, (Miss) Purnima : NMR study of solid hippuric acid ...	533
Tantry, B. A. P. <i>see</i> Rama Swami ...	329, 334
Thakur, K. P. : Rao-Keer constant of alkali halide crystals ...	779
<i>see</i> Sinha, S. P. ...	387
Thakur, M. L. <i>see</i> Jha, K. M. ...	477, 751

## INDEX

Vyas, A. D. <i>see</i> Purohit, H. D.	... 273, 701	Wagh, M. D. : Spatial filtering technique for restoration of aerial photographic images affected by vibrations ...	776
Vyas, A. R. <i>see</i> Bhatt, V. P.	... 522, 807	Watal, C. : Current algebra & radiative $K^*$ decay ... ... ... ...	232

## W

Wadhwa, B. S. : Comparison of various level density formulae ... ...

645 Zaidi, Z. H. *see* Khan, Z. H. ... 66

## Z

Zaidi, Z. H. *see* Khan, Z. H. ... 66

## Keyword Index

### A

- Absorption edge, K. : K absorption edge of germanium in some dichalcogenides ...
- Absorption spectra : Absorption & emission spectra of CdI<sub>2</sub> : Mn phosphor ...
- Absorption spectra of mixed aqueous solution of KCl & PbCl<sub>2</sub> ... ...
- Absorption spectra of naphthalene, anthracene & phenanthrene cations in boric acid glass in the region 600-1400 mm ...
- Electronic absorption spectra of 3, 5- & 2,6-dichloropyridines ... ...
- Electronic absorption spectrum of 4-methyl pyrimidine ... ... ...
- Infrared absorption spectra of 1-methoxy & 1-ethoxynaphthalene ... ...
- Optical absorption spectrum of Pd<sup>2+</sup> doped in NH<sub>4</sub>Cl single crystal ... ...
- Activation energies of plasticized polymers from dielectric data ... ...
- Estimation of activation energy of vacancy formation by quenching experiments ...
- Acyl halides : Vibrational spectra & rotational isomerism of some acyl halides ...
- Aging effect : Oxide growth on bismuth films & aging effect on current density through the sandwiched bismuth oxide layers ... ... ...
- Alloys : Binding energy measurements in AlCo system ... ...
- High temperature thermal expansion of Pt-40% Rh alloy ... ... ...
- Local elastic constants in dilute Mo-Re alloy pseudo-Grüneisen parameter of pure liquids & liquid metal alloys ... ...
- Stress-induced ferromagnetic phases in ferrous alloys ... ... ...
- Aluminium : A simple model pseudopotential for metals—Application to aluminium ...
- Amplifier, difference : Gain stability of the difference amplifier ... ...

- 74 Amplitude quantities: Various mean-square amplitude quantities in carbonyl cyanide ... 78
- 315 Amplitudes, vibrational : Evaluation of kinetic constants & vibrational mean amplitudes of CX<sub>3</sub><sup>2-</sup> systems ... ... 437
- 526 Force constants & vibrational amplitudes of some octahedral hexahalo anions ... 455
- 66 Intramolecular force fields & vibrational mean amplitudes of some octahedral systems of Mo<sub>6</sub><sup>n+</sup>-type ions ... ... 489
- 64 Mean amplitudes of vibration of some lanthanide trifluorides ... ... 495
- 726 Mean amplitudes of vibration of some trihalide ions ... ... ... 393
- 727 Spectroscopic studies in mean amplitudes of vibration of pentafluorides of arsenic, phosphorus & vanadium ... ... 550
- 654 Anions : Force constants & vibrational amplitudes of some octahedral hexahalo anions ... ... ... 455
- 373 Kinetic & potential constants of tetrahedral thio & seleno anions ... ... 155
- 544 Anisotropy : Pseudo-dipolar anisotropy in cubic FeGe ... ... ... 535
- 149 Aperture : Detection & parameter estimation of static optical signals by an annular aperture in the presence of background noise ... ... ... 582
- 815 A general expression for incoherent transfer function of slit apertures with uni-dimensional apodization filters ... 395
- 689 Apodization filters : A general expression for incoherent transfer functions of slit apertures with uni-dimensional anodization filters ... ... ... 395
- 162 830 A simple method for the generation of cos<sup>2</sup> type apodization filters ... ... 460
- 811 Argon, liquid : Self-consistent approximation for the radial distribution functions of liquid argon ... ... ... 47
- 412 171 Artinite, structure of : X-ray study of changes of the structure of artinite on heat treatment ... ... ... 667
- 772

- Atom polarization : Evaluation of atom polarization from infrared intensity measurements ... ... ...  
 Atomic mass : Influence of atomic mass on the Coriolis coupling constants in some XY<sub>4</sub>-type molecules ... ... ...  
 Influence of atomic mass on the Coriolis coupling constants in some XY<sub>4</sub>-type molecules : XCl<sub>4</sub> molecules ... ...  
 Atomic systems : Optimized double configuration wavefunctions of lowest <sup>1</sup>D state of four-electron atomic systems ...  
 Atomization energies of diatomic heavier crystals & electron affinities of halides & chalcogenides ... ...  
 Atmosphere : Drift velocity & energy distribution of large molecules in the upper atmosphere ... ...  
 Atmospheric pressure broadening effects on spectral lines : A distribution relation ...  
 Avalanche breakdown : Microplasma switching & negative resistance in the avalanche breakdown region of silicon p-n junctions

**B**

- Background brightness : Experimental study of background brightness in image tubes  
 Band system : Franck-Condon factors & r-centroids for the band of A<sup>2</sup>Π — X<sup>2</sup>Σ system of magnesium hydride ...  
 Franck-Condon factors & r-centroids for the b <sup>1</sup>Σ<sup>+</sup> — X <sup>3</sup>Σ<sup>-</sup> band system of NF ...  
 Franck-Condon factors & r-centroids for the H<sup>3</sup>Φ<sub>u</sub>—G <sup>3</sup>Δ<sub>g</sub> (Gaydon-Herman) green and system of N<sub>2</sub> ... ...  
 Binary mixtures : Microwave absorption of binary mixtures in dilute solutions : morpholine, anilines & pyridines ... ...  
 Binding energy measurements in Al-Co system  
 Biotites : Fission track ages of some biotites of Bihar mica belt ... ...  
 Bonds : Compliance constants for some metal-carbon & metal-oxygen bonds ...  
 Bonding, hydrogen : Hydrogen bonding in some trifluoro compounds ... ...  
 Brasses : Dependence of Young's modulus on zinc content in α-phase copper & silver brasses ... ...  
 Breakdown potential of air column with crossed rf & dc electric fields ...  
 Breakdown of thin polythene films by surface discharges ... ...  
 Bridgman-type furnace : Growing optical grade lithium fluoride single crystals using a Bridgman-type vacuum furnace ...

**C**

- Camera : Simple attachment to a Debye-Scherrer camera for use at low temperatures

242	Capacitance, self : Determination of characteristic self capacitance & self inductance of a discharge oscillator ... ... ...	463
598	Capacitors : Dosimetric study of changes due to X-ray doses in the dielectric conductance of thin film capacitors ... ...	165
462	Carbon dioxide laser transitions : Effect of rotational relaxation on the sequentially Q-switched carbon-dioxide laser transitions ...	129
713	Carbonyl cyanide : Various mean-square amplitude quantities in carbonyl cyanide ...	78
387	Carrier concentrations : On carrier concentrations & Fermi level in impure semiconductors ... ... ...	70
440	Carrier distribution : Effect of mobility gradiation on excess carrier distribution & cut-off frequency of a diffused base transistor at different injection levels ... ...	680
167	Cathodoluminescence : Cathodoluminescence & decay studies of CaS : As phosphor ...	188
1	Centrosymmetry : Semi-cumulative function tests for centrosymmetry for the random permutation method ... ...	444
99	Chiral symmetry breaking & the K-Nσ term Chlorophenol : <sup>1</sup> L <sub>a</sub> & <sup>1</sup> L <sub>b</sub> electronic bands & vibrational spectra of 2-bromo-4-chloro- & 4-bromo-2-chlorophenol ... ...	846
244	Circuit, bistable : A negative resistance oscillator using a bistable circuit ... ...	296
243	Cleavage plane : Reactivity for some dislocation etchants on the cleavage plane of Bi, Sb & Bi-Sb alloy single crystals ...	220
77	Cluster model : 16.7-MeV state of <sup>5</sup> He in the cluster model ... ...	807
370	Collisions, high energy : Tests for scaling in multiplicity distribution in high energy π <sup>-</sup> p collisions ... ...	117
689	Complexes : EPR & optical absorption studies on certain copper complexes ... ...	839
850	NMR study of bis (thiourea) cobalt (II) complexes ... ...	394
554	Compliance constants for some metal-carbon & metal-oxygen bonds ... ...	382
273	Compressibility : Complex compressibility of a liquid ... ... ..	554
245	Ultrasonic velocities in & compressibilities of rare earth electrolytes in aqueous solutions ... ...	557
760	Conductivity, lattice thermal : Effect of Debye temperature θ <sub>D</sub> on lattice thermal conductivity ... ...	509
163	Cores, constant density : Massive spheres with constant-density cores & two variable density outer shells in general relativity ...	788
358	Coriolis coupling constants : Influence of atomic mass on the Coriolis coupling constants in some XY <sub>4</sub> -type molecules ... Influence of atomic mass on the Coriolis coupling constants in some XY <sub>4</sub> -type molecules : XCl <sub>4</sub> molecules ... ...	423
397	Cosmological constant : Gravitonic mass & cosmological constant ... ...	598
	Counter : Counter for thermally stimulated exo-electron studies ... ...	167
		685

## INDEX

Crystals : Atomization energies of diatomic heavier crystals & electron affinities of halides & chalcogenides	387	Current-voltage characteristics of bismuth-bismuth oxide-indium sandwich structures at room temperature	238
Effect of crystal potential on the electronic polarizabilities & radii of ions in alkali halide crystals	85	Czochralski technique : Growth of $\text{CaWO}_4\text{-Nd}^{3+}$ single crystals by Czochralski technique	92
Electrical conductivity of calcium tungstate single crystals	539		
Electrolytic etching of dislocations in Bi-Sb crystals	522	<b>D</b>	
Electronic polarizabilities & sizes of ions in alkaline earth halide crystals with the fluorite structure	803	Damping, collisional : Collisional damping of electromagnetic waves in plasma	786
Entropy of formation of Schottky defects in $\text{CsCl}$ -type crystals	168	Debye-Scherrer camera : Simple attachment to a Debye-Scherrer camera for use at low temperatures	397
Fractional ionic character & effective ionic charges on alkali & silver halide crystals	81	Debye temperature : Effect of Debye temperature $\theta_D$ on lattice thermal conductivity	788
Glow curves of thermally pretreated $\text{NaCl}$ : Sr Crystals	79	Debye-Waller factors of $\alpha$ -iron, nickel, molybdenum & tungsten by lattice dynamical models	89
Growing optical grade lithium fluoride single crystals using a Bridgman-type vacuum furnace	358	Decay : Current algebra & radiative $K^*$ decay	232
Growth of ammonium bromide crystals from the vapour phase	519	Effect of flux on decay & thermoluminescence of $\text{CaS} : \text{Zr}$ phosphors	603
Growth of $\text{CaWO}_4\text{-Nd}^{3+}$ single crystals by Czochralski technique	92	On the decay of $^{106}\text{Rh}$	392
Growth of YIG single crystals by flux-melt technique	740	Decay scheme of $^{104}\text{Rh}$	290
A Large X-ray topography camera & some X-ray topographic investigations of whisker crystals	350	Decay & thermoluminescence of $\text{CaS} : \text{Sb}$ phosphors	596
Multiple-phonon excitations in molecular crystals by giant pulse ruby laser	626	Decay studies : Cathodoluminescence & decay studies of $\text{CaS}$ : As phosphor	188
Nature of transformations at $(1\bar{1}1)(\bar{1}1\bar{1})$ incoherent crystal boundary in silicon crystals	847	deLaunay Model : Lattice dynamical study of gold & silver by means of modified deLaunay Model : Part I	339
Optical absorption spectrum of $\text{Pd}^{2+}$ doped in $\text{NH}_4\text{Cl}$ single crystal	654	Demodulator : A multiloop multifilter phase-locked demodulator	224
Phase transitions of sodium nitrite-sodium nitrate mixed crystals	71	Density formulae : Comparison of various level density formulae	645
Polarization of $\text{BaTiO}_3$ & $\text{KNbO}_3$ single crystals with variation of applied ac electric field	736	Devices : A dielectric mask for GaAs devices	160
Rao-Keer constant of alkali halide crystals	779	Effect of intense magnetic field on the recombination process in semiconductor devices Part I—Theoretical analysis	329
Reactivity of some dislocation etchants on the cleavage plane of Bi, Sb & Bi-Sb alloy single crystals	807	Effect of intense magnetic field on the recombination process in semiconductor devices : Part II—Experimental study	334
Ultrasonic studies in mixed liquid crystals	648	X-ray dosimetric study of Bharat Electronics (BEL) solid state devices	321
Crystallites : Diffraction intensities from radially thick curved crystallites—A numerical analysis	230	Dielectric behaviour of polystyrene thermoelectrets	729
Cubic FeGe : The nature of spin arrangement in cubic FeGe	408	Dielectric behaviour of some ferroelectric powders	483
Pseudo-dipolar anisotropy in cubic FeGe	535	Dielectric conductance : Dosimetric study of changes due to X-ray doses in the dielectric conductance of thin film capacitors	165
Current algebra & radiative $K^*$ decay	232	Dielectric data : Activation energies of plasticized polymers from dielectric data	373
Current density : Oxide growth on bismuth films & aging effect on current density through the sandwiched bismuth oxide layers	815	Dielectric function : Effect of spatial variation of dielectric function & of effective mass on ground states of shallow donors in Si & Ge	675
Current losses : Beam current losses in race track microtron	237	Dielectric investigation of plasma in some semiconductors	465

Dielectric losses : Simple microwave interferometer for measurement of electric permittivity & losses of liquids of 4.23 mm wavelength ...	268	Dosimetric study of changes due to X-ray doses in the dielectric conductance of thin film capacitors ...	165
Dielectric mask : A dielectric mask for GaAs devices ...	160	Dust, charged : On the interior metric of a charged-dust cylinder in general relativity	430
Dielectric properties : Dielectric & structural properties of vacuum deposited niobium oxide films ...	26	 <b>E</b>	
Dielectric relaxation : Electric dipole moment & dielectric relaxation of some esters in benzene solution ...	701	Echo : Design of a Colpitts pushpull pulsed oscillator for ultrasonic pulse echo technique ...	514
Dielectric relaxation process in esters ...	448	Interaction of a sequence of laser pulses with a two-level system & explanation of photon echo ...	502
Study of dielectric relaxation & measurement of dipole moments of esters : Part III—Acetates & acetoacetates ...	692	Einstein's fluctuation probability : On the generalization of Einstein's fluctuation probability ...	827
Part IV—Amyl esters ...	697	Elastic constants : Local elastic constants in dilute Mo-Re alloy ...	811
Diffraction images of coherently illuminated objects in the presence of spatial frequency amplitude filters ...	133	Electrets : Dielectric behaviour of polystyrene thermo-electrets ...	729
Diffraction images of truncated periodic objects formed by a diffraction-limited imaging system with an annular aperture	138	Field & temperature effect on charge distribution on faces of cubical magneto-electrets of perspex ...	254
Diffraction intensities from radially thick curved crystallites—A numerical analysis	230	Thermally stimulated currents in carnauba wax magneto-electrets ...	849
Diffractometers, automatic : Trombay automatic diffractometers : A 3-dimensional fully automatic neutron diffractometer ...	121	Electrical conductivity : Augmentation of electrical conductivity of soda glass due to impact Ar <sup>+</sup> ions ...	250
Diodes : Fabrication of gold-n-type gallium arsenide Schottky barrier varactor diodes	7	Electrical conductivity of calcium tungstate single crystals ...	539
Low frequency noise in the perfect insulated diode with shallow traps under the critical conditions ...	524	Electrical conductivity of evaporated tellurium films ...	399
Low frequency noise in space charge limited solid state diode neglecting diffusion	169	Electrical discharges : Rectification in electrical discharges ...	75
Dipolar anisotropy : Pseudo-dipolar anisotropy in cubic FeGe ...	355	Electric field gradient tensor : Calculation of electric field gradient tensor & NQR frequencies ...	69
Dipole moment : Electric dipole moment & dielectric relaxation of some esters in benzene solution ...	701	Electric fields : Breakdown potential air column with crossed rf & dc electric fields	760
Study of dielectric relaxation & measurement of dipole moments of esters : Part III—Acetates & acetoacetates ...	692	On non-steady electric fields ...	114
Part IV—Amyl esters ...	697	Polarization of BaTiO <sub>3</sub> & KNbO <sub>3</sub> single crystals with variation of applied ac electric field ...	736
Discharge oscillator : Determination of characteristic self capacitance & self inductance of a discharge oscillator ...	463	Radiation-controlled electroluminescence under concurrent action of electric field & ultraviolet radiation ...	317
Discharge pulses : Influence of time on emission of discharge pulses in air at a moderate pressure under de-excitation ...	72	Electric permittivity : Simple microwave interferometer for measurement of electric permittivity & losses of liquids at 4.23 mm wavelength ...	268
Discharges : Breakdown of thin polythene films by surface discharges ...	163	Electric ring source : Excitation of electromagnetic waves by electric ring source in magnetized cylindrical solid state plasma column ...	192
Characteristics of discharge pulses in low pressure power frequency discharges ...	39	Electrode glows in aqueous solutions ...	43
Studies on hysteresis & antihysteresis in induced electrodeless discharges under perfect dark illumination ...	565	Electrode, wire : Operation of an argon filled wire electrode streamer chamber ...	791
Dislocations : Electrolytic etching of dislocations in Bi-Sb crystals ...	522		
Distribution functions : Self consistent approximation for the radial distribution functions of liquid argon ...	47		
Donors : Effect of spatial variation of dielectric function & of effective mass on ground states of shallow donors in Si & Ge ...	675		

## INDEX

<p>Electroluminescence : Radiation-controlled electroluminescence under concurrent action of electric field &amp; ultraviolet radiation ...</p> <p>Electroluminescent brightness : Voltage &amp; frequency dependence of electroluminescent brightness of ZnS : Cu, Sn phosphor ...</p> <p>Voltage &amp; frequency dependence of spectral distribution &amp; electroluminescent brightness of (Zn, Cd, Hg) S : Cu, Ga, In luminophor ...</p> <p>Electrolytes : Ultrasonic velocities in &amp; compressibilities of rare earth electrolytes in aqueous solutions ...</p> <p>Electrolytic etching of dislocations in Bi-Sb crystals ...</p> <p>Electromagnetic waves : Collisional damping of electromagnetic waves in plasma ...</p> <p>Excitation of electromagnetic waves by electric ring source in magnetized cylindrical solid state plasma column ...</p> <p>Electron : Amplification of ultrasonic waves in piezoelectric semiconductor on the interaction with an electron beam ...</p> <p>Atomization energies of diatomic heavier crystals &amp; electron affinities of halides &amp; chalcogenides ...</p> <p>Counter for thermally stimulated exo-electron studies ...</p> <p>Determination of electron temperature in a Lorentz plasma by sonic probe ...</p> <p>Explanation of temperature variation of physical properties of metals &amp; insulators on the basis of temperature dependence of mean free-path of electrons &amp; phonons</p> <p>Secondary electron emission of amorphous alumina films ...</p> <p>Electronic absorption spectra of 3, 5 &amp; 2, 6-dichloropyridines ...</p> <p>Electronic absorption spectrum of 4-methyl pyrimidine ...</p> <p>Electronic bands : <math>^1L_a</math> &amp; <math>^1L_b</math> electronic bands &amp; vibrational spectra of 2-bromo-4-chloro- &amp; 4-bromo-2-chlorophenol ...</p> <p>Electronic polarizabilities : On the correlation between electronic polarizabilities &amp; radii of ions ...</p> <p>Effect of crystal potential on the electronic polarizabilities &amp; radii of ions in alkali halide crystals ...</p> <p>Electronic polarizabilities &amp; sizes of ions in alkaline earth halide crystals with the fluorite structure ...</p> <p>Electronic spectra &amp; infrared absorption spectra of 3-methylisoquinoline ...</p> <p>Electronic transformer : An electronic impedance transformer for use with a selenium photovoltaic cell ...</p> <p>Emission characteristics : Effect of flux on emission characteristics of CaS : Zr phosphors ...</p> <p>Emission spectra : Absorption &amp; emission spectra of CdI<sub>2</sub> : Mn phosphor ...</p> <p>Energy distribution : Drift velocities &amp; energy distribution of large molecules in the upper atmosphere ...</p>	<p>Energy spectra of ions &amp; <math>\Sigma</math>-hyperons produced from K<sup>-</sup> capture ... ... ... 570</p> <p>Energy, threshold : Threshold energy for impact in GaAs ... ... ... 179</p> <p>Entropy of formation of Schottky defects on CsCl-type crystals ... ... ... 168</p> <p>Excess entropy of mixing liquids ... 202</p> <p>EPR &amp; optical absorption studies on certain copper complexes ... ... ... 394</p> <p>ESR study of penta-coordinated NNN'N'''N'''-hexamethyl-3, 6-diazaoctane-1, 8-diamine copper sulphate, H<sub>2</sub>O ... 591</p> <p>ESR studies on thiocyanato triethylene tetramine copper (II) thiocyanate ... 632</p> <p><i>Escherichia Coli</i> : Qualitative spectrographic analysis of <i>Escherichia coli</i> ... ... ... 722</p> <p>Esters : Electric dipole moment &amp; dielectric relaxation of some esters in benzene solution</p> <ul style="list-style-type: none"> <li>Study of dielectric relaxation &amp; measurement of dipole moments of esters :</li> <li>Part III—Acetates &amp; acetoacetates ... 692</li> <li>Part IV—Amyl esters ... ... ... 697</li> </ul> <p>Etchants : Reactivity of some dislocation etchants on the cleavage plane of Bi, Sb &amp; Bi-Sb alloy single crystals ... ... ... 807</p> <p>Etching : Electrolytic etching of dislocations in Bi-Sb crystals ... ... ... 522</p> <p>Exchange parameters : Determination of exchange parameters in some fcc type-2 Heisenberg antiferromagnets : HTS expansion method ... ... ... 589</p> <p>Excitation dc : Influence of time on emission of pulses in air at a moderate pressure under dc excitation ... ... ... 72</p> <p>FC factors : Franck-Condon factors &amp; <i>r</i>-centroids for <math>A^4\Pi - X^1\Sigma^+</math> system of GeO molecule ... ... ... ... ... 528</p> <p>Franck-Condon factors &amp; <i>r</i>-centroids for the bands of <math>A^2\Pi - X^2\Sigma</math> system of magnesium hydride ... ... ... ... ... 244</p> <p>Franck-Condon factors &amp; <i>r</i>-centroids for the <math>b^1\Sigma^+ - X^3\Sigma^-</math> band system of NF ... 243</p> <p>Franck-Condon factors &amp; <i>r</i>-centroids for the <math>H^3\phi_u - G^3\Delta_g</math> (Gaydon-Herman) green band system of N<sub>2</sub> ... ... ... 77</p> <p>Fermi gas model : Comparison of various level density formulae ... ... ... 645</p> <p>Fermi level : On carrier concentrations &amp; Fermi level in impure semiconductors ... ... ... 70</p> <p>Ferroelectric powders : Dielectric behaviour of some ferroelectric powders ... ... ... 483</p> <p>Ferromagnetic phases : Stress-induced ferromagnetic phases in ferrous alloys ... ... ... 412</p> <p>Ferromagnets, anti : Determination of exchange parameters in some fcc type-2 Heisenberg anti-ferromagnets : HTS expansion method ... ... ... ... 589</p> <p>Field effect : Field &amp; temperature effect on charge distribution on faces of cubical magneto-electrets of perspex ... ... ... 254</p>
---	---

## F

Films : Breakdown of thin polythene films by surface discharges	163
Dosimetric study of changes due to X-ray doses in the dielectric conductance of their film capacitors	165
Dielectric & structural properties of vacuum deposited niobium oxide films	26
Electrical conductivity of evaporated tellurium films	399
Optical properties of cuprous sulphide films	21
Oxide growth on bismuth films & aging effect on current density through the sandwiched bismuth oxide layers	815
Secondary electron emission of amorphous alumina films	782
Structural & optical properties of indium arsenide films	17
X-ray studies of lattice defects in chemically deposited thin films of silver	156
Filter, multi : A multiloop multifilter phase-locked demodulator	224
Filtering technique, spatial : Spatial filtering technique for restoration of aerial photographic images affected by vibrations	776
Filters, apodization : A general expression for incoherent transferfunction of slit apertures with uni-dimensional apodization filters	133
A simple method for the generation of $\cos^2$ -type apodization filters	850
Filters, spatial frequency amplitude : Diffraction images of coherently illuminated objects in the presence of spatial frequency amplitude filters	300
Fission track ages of some biotites of Bihar mica belt	460
Fluoroaminotoluenes : Vibrational spectra of some fluoroaminotoluenes	133
Flux-melt technique : Growth of YIG single crystals by flux-melt technique	498
Force constants of borazine & borazine- $d_8$	455
Force constants & vibrational amplitudes of some octahedral hexahalo anions	489
Force fields : Intramolecular force fields & vibrational mean amplitudes of some octahedral systems of $\text{Mo}_6^{n-}$ -type ions	592
Fourier transform: Lensless Fourier transform holographic multiplexing : Part I—Carrier multiplexing	852
Foveal luminosity in white light adaptation	109
Friction constant : Frequency-dependent friction constant & its implication to single particle properties of liquid metals Na & Pb	261
Function, integrated minimum : Use of integrated minimum function in heavy atom molecules to identify vectors between heavy & light atoms	444
Function tests : Semi-cumulative function tests for centrosymmetry for the random permutation method	880

**G**

GaAs : Threshold energy for impact in GaAs	179
Gain stability of the difference amplifier	772
Galaxy, model : A simple model of the galaxy with an algebraic density law	614
Gallium arsenide : Fabrication of gold-n-type gallium arsenide Schottky barrier varactor diodes	7
Gap length : A theory of the variation of mean gap length with charge in nuclear emulsions	13
Gases : On the formation of double molecules in dipolar & quadrupolar gases	103
Germanium : K absorption edge of germanium in some dichalcogenides	74
Glass : Absorption spectra of naphthalene, anthracene & phenanthrene cations in boric acid glass in the region 600-1400 nm	66
Augmentation of electrical conductivity of soda glass due to impact of $\text{Ar}^+$ ions	250
Characteristics of phosphate glasses developed as a dielectric solid state particle track detector	834
Glow curves of thermally pretreated $\text{NaCl}$ : Sr crystals	79
Gloows : Electrode glows in aqueous solutions	43
Gold-n-type : Fabrication of gold-n-type gallium arsenide Schottky barrier varactor diodes	7
Gravitonic mass : Gravitonic mass & cosmological constant	167
Grüneisen parameter : Pseudo-Grüneisen parameter of pure liquids & liquid metal alloy	830

**H**

${}^5\text{He}$ : 16.7-MeV state of ${}^5\text{He}$ in the cluster model	117
Harmonic generation : Nonlinear second harmonic generation in bounded cold beam-hot plasma systems	35
Heat treatment : X-ray study of changes of the structure of artinite on heat treatment	667
Holographic multiplexing : Lensless Fourier transform holographic multiplexing : Part I—carrier multiplexing	592
Hoyle-Fowler model : Modified Hoyle-Fowler model for quasars	457
Hückel calculation : Extended Hückel calculation of molecular parameters of calcium halide	704
Hydrocarbons : Calculation of polarographic half-wave reduction & oxidation potentials for alternant hydrocarbons	434
Hydrogen bonding in some trifluoro compounds	273
Hyperfragments & double $\Delta$ hyperfragments produced from $\Xi^-$ captures	213
Nuclear cascade & range of spallation hyperfragments	286

## INDEX

Hyperons : Energy spectra of ions & $\Sigma^-$ hyperons produced from $K^-$ -capture ...	570	Interaction problem : Solution for two-level interaction problem with loss mechanism	622
Hyperfragments & double $\Lambda$ hyperfragment produced from $\Xi^-$ captures ...	213	Interferometer : Simple microwave interferometer for measurement of electric permittivity & losses of liquids at 4.23 mm wavelength ...	268
Nuclear capture at rest of $\Xi$ hyperons ...	51		
Hysterisis : Studies on hysteresis & anti-hysteresis in induced (electrodeless) discharges under perfect dark illumination ...	565	Ion : Augmentation of electrical conductivity of soda glass due to impact of $Ar^+$ ions ...	250
		On the correlation between electronic polarizabilities & radii of ions ...	855
Illumination, dark : Studies on hysteresis & anti-hysteresis in induced (electrodeless) discharges under perfect dark illumination ...		Effect of crystal potential on the electronic polarizabilities & radii of ions in alkali halide crystals ...	85
Images of truncated sine- & square wave periodic objects in the presence of transverse sinusoidal vibrations ...	565	Electronic polarizabilities & sizes of ions in alkaline earth halide crystals with the fluorite structure ...	803
Image tubes : Evaluation of high quality phosphor screens for image tubes ...	842	Molecular constants of some $XY_4$ square planar type molecules & ions ...	206
Experimental study of background brightness in image tubes ...	670	Studies of ground state wavefunction of $Cu^{2+}$ ion in $K_2CO(SO_4)_2 \cdot 6H_2O$ ...	748
Imaging system : Diffraction images of truncated periodic objects formed by a diffraction-limited imaging system with an annular aperture ...	99	Ionic character : Fractional ionic character & effective ionic charges in alkali & silver halide crystals ...	81
Impact energy : Threshold energy for impact energy in GaAs ...	138	Ionic charges : Fractional ionic character & effective ionic charges in alkali & silver halide crystals ...	81
Impedance transformer : An electronic impedance transformer for use with a selenium photovoltaic cell ...	179	Iron-57 : Lattice dynamical study of the recoilless fraction of iron-57 in nickel molybdenum, tungsten, $\alpha$ -iron & copper	182
Imperfection, point : Effect of point imperfections on lattice thermal conductivity of an insulator at high temperature ...	452	Isomerism : Vibrational spectra & rotational isomerism of some acyl halides ...	149
Inductance, self : Determination of characteristic self capacitance & self inductance of a discharge oscillator ...	720	Isotherm : Triplet correlations in liquid neon along 35.05 K isotherm ...	386
Infrared absorption spectra : Electronic & infrared absorption spectra of 3-methylisoquinoline ...	463		
Infrared absorption spectra of 1-methoxy & 1-ethoxynaphthalene ...	532	Kaolinite : X-ray line broadening study of kaolinite under dynamic heating ...	660
Infrared intensity : Evaluation of atom polarization from infrared intensity measurements ...	727	Kinetic constants : Evaluation of kinetic constants & vibrational mean amplitudes of $CX_3^{2-}$ systems ...	437
Infrared spectra of 2,4- & 2,6-dibromophenols in dilute solution state ...	242	Kinetic & potential constants of tetrahedral thio & seleno anions ...	155
Infrared & ultraviolet absorption spectra of <i>p</i> -fluorobenzoyl chloride ...	597		
Role of oxygen and $La^{3+}$ ions on the infrared spectra & growth patterns of the photocurrent in $ZnO$ photoconductor ...	461		
Insulator : Effect of point imperfections on lattice thermal conductivity of an insulator at high temperatures ...	314	Laser : Edge structure patterns in $LiIO_3$ using ruby laser ...	57
Explanation of temperature variation of physical properties of metals & insulators on the basis of temperature dependence of mean free-path of electrons & phonons	720	Effect of rotational relaxation on the sequentially <i>Q</i> -switched carbon-dioxide laser transitions ...	129
Integrated minimum function : Use of integrated minimum function in heavy atom molecules to identify vector between heavy & light atoms ...	751	Interaction of a sequence of laser pulses with a two-level system & explanation of photon echo ...	502
	261	Laser excited Raman spectrum of 1, 1, 2-trifluoro 1, 2, 2-trichloroethane ...	585
		Multiple-photon excitations for two-level interaction problem with loss mechanism	626
			881

## I

Illumination, dark : Studies on hysteresis & anti-hysteresis in induced (electrodeless) discharges under perfect dark illumination ...

Images of truncated sine- & square wave periodic objects in the presence of transverse sinusoidal vibrations ...

Image tubes : Evaluation of high quality phosphor screens for image tubes ...

Experimental study of background brightness in image tubes ...

Imaging system : Diffraction images of truncated periodic objects formed by a diffraction-limited imaging system with an annular aperture ...

Impact energy : Threshold energy for impact energy in GaAs ...

Impedance transformer : An electronic impedance transformer for use with a selenium photovoltaic cell ...

Imperfection, point : Effect of point imperfections on lattice thermal conductivity of an insulator at high temperature ...

Inductance, self : Determination of characteristic self capacitance & self inductance of a discharge oscillator ...

Infrared absorption spectra : Electronic & infrared absorption spectra of 3-methylisoquinoline ...

Infrared absorption spectra of 1-methoxy & 1-ethoxynaphthalene ...

Infrared intensity : Evaluation of atom polarization from infrared intensity measurements ...

Infrared spectra of 2,4- & 2,6-dibromophenols in dilute solution state ...

Infrared & ultraviolet absorption spectra of *p*-fluorobenzoyl chloride ...

Role of oxygen and  $La^{3+}$  ions on the infrared spectra & growth patterns of the photocurrent in  $ZnO$  photoconductor ...

Insulator : Effect of point imperfections on lattice thermal conductivity of an insulator at high temperatures ...

Explanation of temperature variation of physical properties of metals & insulators on the basis of temperature dependence of mean free-path of electrons & phonons

Integrated minimum function : Use of integrated minimum function in heavy atom molecules to identify vector between heavy & light atoms ...

## K

Kaolinite : X-ray line broadening study of kaolinite under dynamic heating ...

Kinetic constants : Evaluation of kinetic constants & vibrational mean amplitudes of  $CX_3^{2-}$  systems ...

Kinetic & potential constants of tetrahedral thio & seleno anions ...

Laser : Edge structure patterns in  $LiIO_3$  using ruby laser ...

Effect of rotational relaxation on the sequentially *Q*-switched carbon-dioxide laser transitions ...

Interaction of a sequence of laser pulses with a two-level system & explanation of photon echo ...

Laser excited Raman spectrum of 1, 1, 2-trifluoro 1, 2, 2-trichloroethane ...

Multiple-photon excitations for two-level interaction problem with loss mechanism

## L

Lattice defects : X-ray studies of lattice defects in chemically deposited thin films of silver	156	Magnetic field : Effect of intense magnetic field on the recombination process in semiconductor devices : Part I—theoretical analysis	329
Lattice dynamical models : Debye-Waller factors of $\alpha$ -iron, nickel, molybdenum & tungsten by lattice dynamical models	89	Part II—Experimental study	334
Lattice dynamical study of gold & silver by means of modified deLaunay model : Part I	339	Power law transfer characteristic of junction field effect transistors in magnetic field	594
Lattice dynamical study of the recoilless fraction of iron-57 in nickel, molybdenum tungsten, $\alpha$ -iron & copper	182	Theory of an inhomogeneous solid state plasma waveguide in a longitudinal magnetic field	320
Lattice, magnetic : Theoretical study of nature of spin interactions of a magnetic lattice	265	Magnetic susceptibility : Variation in magnetic susceptibility of magnetically polarized naphthalene	404
Lattice thermal conductivity : Effect of point imperfections on lattice thermal conductivity of an insulator at high temperatures	720	Magnon contribution to specific heat of some anti-ferromagnetic, perovskites	420
Lattice vibrations : Optically active lattice vibrations—rutile structures	307	Maser : solutions for two-level interaction problem with loss mechanism	622
Lensless Fourier transform holographic multiplexing : Part I—carrier multiplexing	592	Mass, effective : Effect of spatial variation of dielectric function of & of effective mass on ground states of shallow donors in Si & Ge	675
Light adaptation : Foveal luminosity in white light adaptation	852	Mass spectrometric determination of tritium in neutron-irradiated lithium fluoride	389
Liquid : Complex compressibility of a liquid	557	Massive spheres with constant-density cores & two variable density outer shells in general relativity	423
Excess entropy of mixing liquids	202	Massive spheres with three variable-density distributions in general relativity	854
Pseudo-Grüneisen parameter of pure liquids & liquid metal alloys	830	Massive spheres with two constant-density inner layers & a variable density outer layer in general relativity	616
Simple microwave interferometer for measurement of electric permittivity & losses of liquids at 4.23 mm wavelength	268	Matrices : triangular matrices in the theory of molecular vibrations	210
Liquid metals : Frequency-dependent friction constant & its implication to single particle properties of liquid metals : Na & Pb	109	Memory function : Hard-sphere memory function for liquid metals	362
Hard-sphere memory function for liquid metals	362	Meson : A study of the $X^0$ meson decaying into $\pi\pi\eta$	49
Phonons in amorphous solids & their application to liquid metals	175	On the two neutron absorption of $K^-$ mesons	575
Liquid Neon : Triplet correlations in liquid neon along 33.05 K isotherm	386	Metals : Explanation of temperature variation of physical properties of metals & insulators on the basis of temperature dependence of mean free-path of electrons & phonons	751
Luminescence characteristics of $Mn^{2+}$ in LaCl <sub>3</sub>	458	Hard sphere memory function for liquid metals	362
Radiation-induced luminescence in benzene & cyclohexane matrices at low temperatures	783	A simple model pseudopotential for metals — Application to aluminium	171
Luminophor : Voltage & frequency dependence of spectral distribution & electroluminescent brightness of (Zn, Cd, Hg) S; Cu, Ga, In luminophor	732	Metric : On the interior metric of a charged-dust cylinder in general relativity	430
Luminosity : Foveal luminosity in white light adaptation	852	Microplasma switching & negative resistance in the avalanche breakdown region of silicon p-n-junctions	1
M		Microtron : Beam current losses in race track microtron	237
Magnesium hydride : Frank-Condon factors & r-centroids for the bands of $A^3\Pi-X^2\Sigma$ systems of magnesium hydride	244	Microwave absorption of binary mixtures in dilute solutions : Morpholine, anilines & pyridines	370
Magnetic current : Radiation from a line source of magnetic current in cylindrical semiconductor plasma column	757	Microwave interferometer : Simple microwave interferometer for measurement of electric permittivity & losses of liquids at 4.23 mm wavelength	268
Magnetic energy & cylindrically symmetric distribution of matter in equilibrium in general relativity	818		

## INDEX

Mobility gradation : Effect of mobility gradation on excess carrier distribution & cut-off frequency of a diffused base transistor at different injection levels ... ...			
Model, $X(YZ_3)_4$ tetrahedral : Symmetry coordinates for the tetrahedral $X(YZ_3)_4$ model ... ...	680	Neutron, two : On the two-neutron absorption of $K^-$ -mesons ... ...	575
Molecular constants of some $XY_4$ square planar type molecules & ions ... ...		Nitrogen : Validity of modified Rao's rule in liquids of oxygen & nitrogen ... ...	276
Molecular crystals : Multiple-photon excitations in molecular crystals by giant pulse ruby laser ... ...	206	NMR study : Application of broad line NMR technique to the study of amino group rotation in organic solids ... ...	768
Molecular parameters : Extended Hückel calculations of molecular parameters of calcium halide ... ...	626	NMR study of bis(thiourea) cobalt (II) complexes ... ...	382
Molecular vibration : On the molecular vibration analysis of $PS_4^{2-}$ ion ... ...	704	NMR Study of solid hippuric acid ...	533
A simple method for exact solution of $2 \times 2$ secular equation in molecular vibrations ... ...		Wide line proton resonance study of imidazole ... ...	716
Triangular matrices in the theory of molecular vibrations ... ...	601	Noise : Detection & parameter estimation of static optical signals by an annular aperture in the presence of background noise ...	582
Molecules : Drift velocities & energy distribution of large molecules in the upper atmosphere ... ...	309	Low frequency noise in the perfect insulated diode with shallow traps under the critical condition ... ...	524
On the formation of double molecules in dipolar & quadrupolar gases ...	210	Low frequency noise in space charge limited solid state diode neglecting diffusion	169
Molecular constants of some $XY_4$ square planar type molecules & ions ...	440	Nomogram : Estimation of effective thermal conductivity of porous media by means of a nomogram ... ...	663
Use of integrated minimum function in heavy atom molecules to identify vectors between heavy & light atoms ...	103	NQR frequencies : Calculation of electric field gradient tensor & NQR frequencies	69
Moments of inertia : Model independence of the relationship between intrinsic quadrupole moments & transition moments of inertia of even-even nuclei ... ...	206	NQR lines : Zeeman effect of NQR lines in methyl- <i>p</i> -iodobenzoate & methyl- <i>m</i> -iodobenzoate ... ...	636
Mössbauer spectroscopic study of thermal transformation of ferric hydroxide to $\alpha$ - $Fe_2O_3$ ... ...	261	NQR spectra of $^{79}Br$ & $^{81}Br$ ... ...	281
Multiplexing : Lensless Fourier transform holographic multiplexing : Part I—carrier multiplexing ... ...	377	Nuclear capture : Nuclear capture at rest of $\Xi$ hyperons ... ...	51
NF : Frank-Condon factors & $r$ -centroids for the $b\ ^1\Sigma^+ - X\ ^2\Sigma^-$ band systems of NF ...	311	Nuclear cascade & range of spallation hyperfragments ... ...	286
Naphthalene : Spectral response of the magnetically polarized naphthalene ...	592	Nuclear emulsions : A theory of the variation of mean gap length with charge in nuclear emulsions ... ...	13
Variation in magnetic susceptibility of magnetically polarized naphthalene ...	243	Nuclei, even-even : Model independence of the relationship between intrinsic quadrupole moments & transition moments of inertia of even-even nuclei ... ...	377
Neon : Triplet correlations in liquid neon along 35.05 K isotherm ... ...	95	Nucleus, compound : An assessment of the compound nucleus mechanism for 14 MeV neutron-induced reaction in rare-earth region of Nuclei ... ...	640
Neutron diffractometer : Trombay automatic diffractometers : A 3-dimensional fully automatic neutron diffractometer ...	404	Objects, periodic : Images of truncated sine- & square-wave periodic objects in the presence of transverse sinusoidal vibrations	842
Neutron-induced reactions : An assessment of the compound nucleus mechanism for 14 MeV neutron-induced reactions in rare-earth region of nuclei ... ...	386	Optical absorption : EPR & optical absorption studies on certain copper complexes	394
	121	Optical absorption spectrum of $Pd^{2+}$ doped in $NH_4Cl$ single crystal ... ...	654
	640	Optical properties of cuprous sulphide films Structural & optical properties of indium arsenide films ... ...	21

## N

NF : Frank-Condon factors & $r$ -centroids for the $b\ ^1\Sigma^+ - X\ ^2\Sigma^-$ band systems of NF ...	
Naphthalene : Spectral response of the magnetically polarized naphthalene ...	
Variation in magnetic susceptibility of magnetically polarized naphthalene ...	
Neon : Triplet correlations in liquid neon along 35.05 K isotherm ... ...	
Neutron diffractometer : Trombay automatic diffractometers : A 3-dimensional fully automatic neutron diffractometer ...	
Neutron-induced reactions : An assessment of the compound nucleus mechanism for 14 MeV neutron-induced reactions in rare-earth region of nuclei ... ...	

## O

Objects, periodic : Images of truncated sine- & square-wave periodic objects in the presence of transverse sinusoidal vibrations	842
Optical absorption : EPR & optical absorption studies on certain copper complexes	394
Optical absorption spectrum of $Pd^{2+}$ doped in $NH_4Cl$ single crystal ... ...	654
Optical properties of cuprous sulphide films Structural & optical properties of indium arsenide films ... ...	21

Optical signals : Detection & parameter estimation of static optical signals by an annular aperture in the presence of background noise ... ... ...	582
Organic solids : Application of broad line NMR technique to the study of amino group rotation in organic solids... ...	768
Oscillator : Design of a Colpitts push-pull pulsed oscillator for ultrasonic pulse echo technique ... ... ...	514
Determination of characteristic self capacitance & self inductance of a discharge oscillator ... ... ...	463
A negative resistance oscillator using a bistable circuit ... ...	220
Oxygen : Validity of modified Rao's rule in liquids of oxygen & nitrogen ...	276

## P

Particle properties : Frequency dependent friction constant & its implication to single particle properties of liquid metals : Na & Pb ... ...	109
Particle track detector : Characteristics of phosphate glasses developed as a dielectric solid state particle track detector ...	834
Permutation method : Semi-cumulative function tests for centrosymmetry for the random permutation method ...	444
Perovskites, anti-ferromagnetic : Magnon contribution to specific heat of some anti-ferromagnetic, perovskites ...	420
Perspex : Field & temperature effect on charge distribution on faces of cubical magneto-electrets of perspex ...	254
Phase transitions of sodium nitrite-sodium nitrate mixed crystals ...	71
Phonons in amorphous solids & their application to liquid metals ...	175
Explanation of temperature variation of physical properties of metals & insulators on the basis of temperature dependence of mean free-path of electrons & phonons	751
Phonon conductivity of $Mg_2Ge$ , $Mg_2Si$ & $Mg_2Sn$ ...	468
Specular reflection & phonon conductivity of semiconductor LiF ...	247
Phosphors : Absorption & emission spectra of $CdI_2 : Mn$ phosphor ...	315
Activation of zinc sulphide phosphors by metallic impurities ...	612
Cathodoluminescence & Decay studies of $CaS : As$ phosphor ...	188
Decay and thermoluminescence of $CaS : Sb$ phosphors ...	596
Effect of field strength & frequency on $(Zn, Cd)S : Cu, Mn$ phosphors ...	800
Effect of flux on decay & thermoluminescence of $CaS : Zr$ phosphors ...	603
Effect of flux on emission characteristics of $CaS : Zr$ phosphors ...	608

Evaluation of high quality phosphor screens for image tubes ... ...	670
Spectral energy distribution & voltage frequency dependence of Cu-activated ZnS phosphors ... ...	793
Voltage & frequency dependence of electroluminescent brightness of $ZnS : Cu, Sn$ phosphor ... ...	32
Voltage & Frequency dependence of spectral distribution & electroluminescent brightness of $(Zn, Cd, Hg)S : Cu, Ga, In$ luminophor ...	732
Photoconductor : Role of oxygen & $La^{3+}$ ions on the infrared spectra & growth patterns of the photocurrent in $ZnO$ photoconductor Thermally stimulated current curves in $ZnS : Cu : Co$ photoconductor ...	314
Photographic images : Spatial filtering technique for restoration of aerial photographic images affected by vibrations ...	185
Photon echo : Interaction of sequence of laser pulses with a two-level system & explanation of photon echo ...	776
Photon excitations : Multiple-photon excitations in molecular crystals by giant pulse ruby laser ...	502
Photo-sensitivity of dialkyl aniline solutions in carbon tetrachloride ...	626
Photovoltaic cell : An electronic impedance transformer for use with a selenium photovoltaic cell ...	596
Physical properties : Explanation of temperature variation of physical properties of metals & insulators on the basis of temperature dependence of mean free-path of electrons & phonons ...	452
Piezoelectric conductor : Amplification of ultrasonic waves in piezoelectric semiconductor on the interaction with an electron beam ...	751
Amplification of ultrasonic waves in piezoelectric semiconductor through interaction with deformation potential ...	233
Pions : Energy spectra of pions & $\Sigma$ -hyperons produced from $K^-$ -capture ...	235
Plasma : Collisional damping of electromagnetic waves in plasma ...	570
Determination of electron temperature in a Lorentz plasma by sonic probe ...	786
Dielectric investigation of plasma in some semiconductors ...	198
Excitation of electromagnetic waves by electric ring source in magnetized cylindrical solid state plasma column ...	465
Nonlinear second harmonic generation in bounded cold beam-hot plasma systems	192
Plasma waves in a periodic structure carrying current ...	35
Radiation from an electric ring source in plasma environment ...	764
Radiation from a line source of magnetic current in cylindrical semiconductor plasma column ...	657
Radiation from a line source of magnetic current in cylindrical semiconductor plasma column ...	757

## INDEX

Studies on propagation of transverse & longitudinal waves in a plasma ...	561	Q
Theory of an inhomogeneous solid state plasma waveguide in a longitudinal magnetic field ...	320	Quadrupole moments : Model independence of the relationship between intrinsic quadrupole moments & transition moments of inertia of even-even nuclei .....
PMR studies on intramolecular rotation in solid <i>p</i> -aminophenol ...	790	Quasars : Modified Hoyle-Fowler model for quasars .....
<i>p-n</i> Junctions : Microplasma switching & negative resistance in the avalanche breakdown region of silicon <i>p-n</i> junctions ...	1	Quenching : Estimation of activation energy of vacancy formation by quenching experiments .....
Polarizabilities, electronic : Effect of crystal potential on the electronic polarizabilities & radii of ions in alkali halide crystals ...	85	
Polarization of BaTiO <sub>3</sub> & KNbO <sub>3</sub> single crystals with variation of applied ac electric field ...	736	<b>R</b>
Polarographic reduction : Calculation of polarographic half-wave reduction & oxidation potentials of alternant hydrocarbons	434	<i>r</i> -Centroids : Franck-Condon factors & <i>r</i> -centroids for $A^1\Pi-X^1\Sigma^+$ system of GeO molecule .....
Polymers : Activation energies of plasticized polymers from dielectric data ...	373	Franck-Condon factors & <i>r</i> -centroids for the bands of $A^2\Pi-X^2\Sigma$ system of magnesium hydride .....
Potential constants : Kinetic & potential constants of tetrahedral thio & seleno anions ...	155	Franck-Condon factors & <i>r</i> -centroids for the $b^1\Sigma^+-X^3\Sigma^-$ band system of NF .....
Potential curve : Vibrational & rotational properties of <i>ab initio</i> potential curve of $^6\text{Li}^{19}\text{F}$ ...	367	Franck-Condon factors & <i>r</i> -centroids for the $H^3\phi_u-C^3\Delta_g$ (Gaydon-Herman) green band system of N <sub>2</sub> .....
Potential, deformation : Amplification of ultrasonic waves in piezoelectric semiconductor through interaction with deformation potential ...	235	Radiation from an electric ring source in plasma environment .....
Potential energy : Parametric study of potential energy distribution ...	658	Radiation from a line source of magnetic current in cylindrical semiconductor plasma column .....
Potential function : Evaluation of third virial coefficients using the Morse potential function for argon, krypton & xenon ...	707	Radiation-induced luminescence in benzene & cyclohexane matrices at low temperatures
Potentials, oxidation : Calculation of polarographic half-wave reduction & oxidation potentials of alternant hydrocarbons ...	434	Raman spectrum : Laser excited Raman spectrum of 1, 1, 2-trifluoro 1, 2, 2-trichloroethane .....
Pressure broadening : Atmospheric pressure broadening effects on spectral lines : A distribution relation ...	167	Rao-Keer constant of alkali halide crystals ...
Probability : On the generalization of Einstein's fluctuation probability ...	827	Rao's rule : Validity of modified Rao's rule in liquids of oxygen & nitrogen .....
Probe, sonic : Determination of electron temperature in a Lorentz plasma by sonic probe ...	198	Recombination process : Effect of intense magnetic fields on the recombination process in semiconductor devices : Part I—Theoretical analysis .....
Propionamides : Vibrational spectra and normal vibrations of propionamides ...	143	Part II—Experimental study .....
Pseudopotential : A simple model pseudopotential for metals : Application to aluminum ...	171	Rectification in electrical discharges .....
Pulses, : Characteristics of discharge pulses in low pressure power frequency discharges ...	39	Reflection, specular : Specular reflection & phonon conductivity of semiconductor LiF .....
Influence of time on emission of pulses in air at a moderate pressure under dc excitation ...	72	Relativity, general : On the interior metric of a charged-dust cylinder in general relativity .....
		Magnetic energy & cylindrically symmetric distribution of matter in equilibrium in general relativity .....
		Massive spheres with constant-density cores & two variable-density outer shells in general relativity .....
		Massive spheres with three variable-density distributions in general relativity .....
		Massive sphere with two constant-density inner layers & a variable density outer layer in general relativity .....

Relaxation, rotational : Effect of rotational relaxation on the sequentially *Q*-switched carbondioxide laser transitions ...

129	Solid state plasma : Theory of an inhomogeneous solid state plasma waveguide in a longitudinal magnetic field ...	320
1	Sonic probe : Determination of electron temperature in a Lorentz plasma by sonic probe ...	198
790	Spallation hyperfragments : Nuclear cascade & range of spallation hyperfragments ...	286
367	Spatial filtering technique for restoration of aerial photographic images affected by vibrations ...	776
	Specific heat : Magnon contribution to specific heat of some anti-ferromagnetic perovskites ...	420
	Spectral distribution : Voltage & frequency dependence of spectral distribution & electroluminescent brightness of (Zn, Cd, Hg) S : Cu, Ga, In luminophor ...	732
238	Spectral energy distribution & voltage-frequency dependence of Cu-activated ZnS phosphors ...	793
839	Spectral lines : Atmospheric pressure broadening effects on spectral lines : A distribution relation ...	167
7	Spectral response of the magnetically polarized naphthalene ...	95
168	Spectrographic analysis : Qualitative spectrographic analysis of <i>Escherichia coli</i> ...	722
235	Spectroscopic studies in mean amplitudes of vibration of pentafluorides of arsenic, phosphorus & vanadium ...	550
233	X-ray spectroscopic study of some copper manganites ...	60
70	Spin arrangement : The nature of spin arrangement in cubic FeGe ...	408
465	Spin interactions : Theoretical study of nature of spin interactions of a magnetic lattice ...	265
757	Spinels, oxidic : Structural properties of some mixed oxidic spinels ...	745
247	Stability characteristics : Study of the stability characteristics of compound connections ...	856
329	Streamer chamber : Operation of an argon-filled electrode streamer chamber ...	791
334	Stress-induced phases : Stress induced ferromagnetic phases in ferrous alloys ...	412
664	Structural properties : Dielectric & structural properties of vacuum deposited niobium oxide films ...	26
175	Of some mixed oxidic spinels ...	745
823	Structural & optical properties of indium arsenide films ...	17
321	Superconducting states : Ultrasonic absorption in the normal & superconducting states of tin & indium ...	343
169	Symmetry breaking : Chiral symmetry breaking & the K-N $\sigma$ term ...	846
834	Symmetry coordinates for the tetrahedral X (YZ <sub>3</sub> ) <sub>4</sub> model ...	546

## S

Sandwich structures : Current-voltage characteristics of bismuth-bismuth oxide-indium sandwich structures at room temperature ...

Scaling : Test for scaling in multiplicity distribution in high energy  $\pi^-p$  collisions ...

Schottky barrier varactor diodes : Fabrication of gold-n-type gallium arsenide Schottky barrier varactor diodes ...

Schottky defects : Entropy of formation of Schottky defects in CsCl-type crystals ...

Semiconductor : Amplification of ultrasonic waves in piezoelectric semiconductor through interaction with deformation potential ...

Amplification of ultrasonic waves in piezoelectric semiconductor on the interaction with an electron beam ...

On carrier concentrations & Fermi level in impure semiconductors ...

Dielectric investigation of plasma in some semiconductors ...

Radiation from a line source of magnetic current in cylindrical semiconductor plasma column ...

Specular reflection & phonon conductivity of semiconductor LiF ...

Semiconductor devices : Effect of intense magnetic field on the recombination process in semiconductor devices :

Part I—theoretical analysis ...

Part II Experimental study ...

Solar cells : X-ray intensity measurements using silicon solar cells ...

Solids, amorphous : Phonons in amorphous solids & their application to liquid metals

Solid-liquid transition : The phenomenon of solid-liquid transition ...

Solid state devices : X-ray dosimetric study of Bharat Electronics (BEL) solid state devices ...

Solid state diode : Low frequency noise in space charge limited solid state diode neglecting diffusion ...

Solid state particle track detector : Characteristics of phosphate glasses developed as a dielectric solid state particle track detector ...

INDEX

# T

- Temperature effect : Field & temperature effect on charge distribution on faces of cubical magneto-electrets of perspex ...  
 Thermal conductivity : Effect of point imperfections on lattice thermal conductivity of an insulator at high temperatures ...  
 Estimation of effective thermal conductivity of porous media by means of a nomogram ... ...  
 Higher order corrections to low-temperature thermal conductivity of *n*-Ge ...  
 Thermal expansion : High temperature thermal expansion of Pt-40% Rh alloy ...  
 Thermally stimulated currents in carnauba wax magnetoelectrets ...  
 Thermally stimulated current curves in ZnS : Cu : Co photoconductor ... ...  
 Thermal transformation : Mössbauer spectroscopic study of thermal transformation of ferric hydroxide to  $\alpha$ -Fe<sub>2</sub>O<sub>3</sub> ...  
 Thermocouples : Linearization of thermocouples ... ...  
 Transport processes in a thermocouple ...  
 Thermoluminescence : Decay & thermoluminescence of CaS : Sb phosphors ...  
 Effect of flux on decay & thermoluminescence of CaS : Zr phosphors ...  
 Tin : Ultrasonic attenuation in intermediate state of tin ... ... ...  
 Topographic investigations : A Lang X-ray topography camera & some X-ray topographic investigations of whisker crystals ... ... ...  
 Track ages : Fission track ages of some biotites of Bihar mica belt ... ...  
 Track detector : Characteristics of phosphate glasses developed as a dielectric solid state particle track detector ... ...  
 Transfer characteristic : Power law transfer characteristic of junction field effect transistors in magnetic field ... ...  
 Transfer function : A general expression for incoherent transfer function of slit apertures with uni-dimensional apodization filters ...  
 Transformations : Nature of transformations at (111) (111) incoherent crystal boundary in silicon crystals ... ...  
 Transistors : Effect of mobility gradation on excess carrier distribution & cutoff frequency of a diffused base transistor at different injection levels ... ...  
 Power law transfer characteristic of junction field effect transistors in magnetic field ... ... ...  
 Stability investigation of super-alpha composite transistor amplifier ...  
 Study of the stability characteristics of compound connections ... ...  
 Transition : The phenomenon of solid-liquid transition ... ... ...

- Transition moments : Model independence of the relationship between intrinsic quadrupole moments & transition moments of inertia of even nuclei ... ... ... 377  
 Transport processes in a thermocouple ... 477  
 Trifluoro compounds : Hydrogen bonding in some trifluoro compounds ... ... 273  
 Triplet correlations in liquid neon along 35.05 K isotherm ... ... ... 386  
 Tritium : Mass spectrometric determination of tritium in neutron-irradiated lithium fluoride ... ... ... ... 389

# U

- Ultrasonic absorption in the normal & superconducting states of tin & indium ... 343  
 Ultrasonic attenuation in intermediate state of tin ... ... ... 258  
 Ultrasonic pulse : Design of a Colpitts push-pull pulsed oscillator for ultrasonic pulse echo technique ... ... ... 514  
 Ultrasonic studies in mixed liquid crystals ... 648  
 Ultrasonic velocity : Effect of concentration on ultrasonic velocity in aqueous solutions of the sulphate & thiosulphate of magnesium ... ... ... ... 725  
 Ultrasonic velocities in & compressibilities of rare earth electrolytes in aqueous solutions ... ... ... ... 509  
 Ultrasonic waves : Amplification of ultrasonic waves in piezoelectric semiconductor on the interaction with an electron beam ... ... ... ... 233  
 Amplification of ultrasonic waves in piezoelectric semiconductor through interaction with deformation potential ... 235  
 Ultraviolet absorption spectra : Infrared & ultraviolet absorption spectra of *p*-fluorobenzoyl chloride ... ... ... 461  
 Ultraviolet radiation : Radiation-controlled electroluminescence under concurrent action of electric field & ultraviolet radiation ... ... ... ... 317

# V

- Vacancy formation : Estimation of activation energy of vacancy formation by quenching experiments ... ... ... ... 544  
 Vacuum furnace : Growing optical grade lithium fluoride single crystals using a Bridgman-type vacuum furnace ... ... ... 358  
 Varactor diodes : Fabrication of gold-n-type gallium arsenide Schottky varactor diodes 7  
 Vectors : Use of integrated minimum function in heavy atom molecules to identify vectors between heavy & light atoms ... ... ... 261

Velocities, drift : Drift velocities & energy distribution of large molecules in the upper atmosphere ... ... ...  
 Vibration analysis : On the molecular vibration analysis of  $\text{PS}_3^+$  ion ... ...  
 Vibrational amplitudes : Mean amplitudes of vibration of some lanthanide trifluorides ...  
 Evaluation of kinetic constants & vibrational mean amplitude of  $\text{CX}_2^+$  systems ...  
 Force constants & vibrational amplitudes of some octahedral hexahalo anions ...  
 Intramolecular force fields & vibrational mean amplitudes of some octahedral systems of  $\text{Mo}_6^{n-}$ -type ions ... ...  
 Spectroscopic studies in mean amplitudes of vibration of pentafluorides of arsenic, phosphorus & vanadium ... ...  
 Vibrational properties : Vibration & rotational properties of *ab initio* potential curve of  ${}^6\text{Li} {}^{19}\text{F}$  ... ...  
 Vibrational spectra :  ${}^1\text{L}_a$  &  ${}^1\text{L}_b$  electronic bands & vibrational spectra of 2-bromo-4-chloro 4-bromo-2-chlorophenol ...  
 Vibrational spectra of some fluoroamino-toluenes ... ... ...  
 Vibrational spectra & normal vibrations of propionamides ... ... ...  
 Vibrational spectra & rotational isomerism of some acyl halides ... ...  
 Vibrational spectra of 2, 3, 4- & 2, 3, 6-trichlorophenols ... ...  
 Vibrations : Images of truncated sine- & square-wave periodic objects in the presence of transverse sinusoidal vibrations ...  
 Virial coefficients : Evaluation of third virial coefficients using the Morse potential function for argon, krypton & xenon ...

## W

Wavefunctions : Optimized double configuration wavefunctions of lowest  ${}^1\text{D}$  state of four-electron atomic systems ... ...

	Studies of ground state wavefunction of $\text{Cu}^{2+}$ ion in $\text{K}_2\text{CO}(\text{SO}_4)_2 \cdot 6\text{H}_2\text{O}$ ...	748
440	Waves, propagation : Studies on propagation of transverse & longitudinal waves in a plasma ... ... ...	561
495		
437		X
455	X-Rays : Dosimetric study of changes due to X-ray doses in the dielectric conductance of thin film capacitors ... ...	165
489	$\text{K}_{\alpha 1}$ , $\text{L}_{\alpha}$ and $\text{L}_{\beta}$ X-ray satellites ... A Lang X-ray topography camera & some X-ray topographic investigations of whisker crystals ...	158
550	X-ray dosimetric study of Bharat Electronics (BEL) solid state devices ...	350
367	X-ray intensity measurements using silicon solar cells ...	321
296	X-ray line broadening study of kaolinite under dynamic heating ...	664
300	X-ray spectroscopic study of some copper manganites ...	660
143	X-ray studies of lattice defects in chemically deposited thin films of silver ...	60
149	X-ray study of changes of the structure of artinite on heat treatment ...	156
529		667
842	Young's modulus : Dependence of Young's modulus on zinc content in $\alpha$ -phase copper & silver brasses ... ...	245
707		

## Y

Young's modulus : Dependence of Young's modulus on zinc content in  $\alpha$ -phase copper & silver brasses ... ...

713

## Z

Zeeman effect : Zeeman effect of NQR lines in methyl-*p*-iodobenzoate & methyl-*m*-iodobenzoate ... ...

636